of the lands and water rights required for the Holtwood hydroelectric development as of March 1, 1905, the following principal points were considered by me:

1. Market for power output, its extent and distance from the site of the development.

2. Competitive sources of power.

3. Extent of engineering information available regarding the site of the project.

4. Natural advantages and disadvantages of the site.

5. Probable cost of construction.

6. Pondage and storage possibilities.

7. Stream flow characteristics.

8. Time when the development may be carried out.

9. Possibility of financing.

10. Yearly cost of producing the estimated output.

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[15456] CARL WILLIAM WATCHORN.

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CROSS-EXAMINATION.

* * *

[15464] By MR. GOLDBERG:

* * *

[15473] Q. Now, when did you first use this all-steam system in connection with a determination of dependable hydro capacity? A. In the latter part of 1945.

Q. What is the latter part of 1945, what does that mean—December? A. No, beginning with just a day or two prior to the first of July or the latter part of June, 1945.

Q. That is when you began making studies of dependable hydro capacity on the hypothetical all-steam system?

A. In the detail that I have testified in this case. Now, that concept didn't arise as of that time. That had extended back for quite some years.

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[15493] WILLIAM F. UHL.

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CROSS-EXAMINATION.

By MR. GOLDBERG:

* * *

[15495] Q. Now, in arriving at your fair market value, you considered power markets which were made over the period of time from 1896 to 1912, is not that right? A. That is correct, yes, sir.

* * *

Q. And beginning with No. 33 and running through 68, the power market reports which you considered in arriving at your conclusions are all dated subsequent to March 1, 1905? A. Yes.

Q. That would mean, would it not, that none of those reports would have been available at that date to any one reaching a conclusion as to the fair market value of the lands? Is not that so?

* * *

[15496] THE WITNESS: Not those reports, no, no reports coming after that date, that is correct.

By MR. GOLDBERG:

Q. Now, you were concerned, of course, in reaching your conclusion as to the fair market value of the land, with the prospect of earnings available from the proposed development. Right? A. Yes.

Q. And you were concerned in arriving at an appropriate capitalization rate of those prospective earnings as well, is that not right? A. I do not know what you mean by capitalization rates.

Q. At what rate the earnings were to be capitalized in arriving at a fair market value? A. No, sir.

Q. You were only concerned with the estimate in prospect of earnings as they were reflected in these reports we have referred to; is that right? [15497] A. Well, I was interested in that, and the fact that it was probable that earnings could be made which justified the investment in this water-power development.

Q. And you gave effect to whatever estimates of earnings there were in these reports? A. No, I did not.

Q. You mean you did not take into consideration the earnings available? A. Yes, the probable earnings available.

Q. Now, you were concerned, I take it, with the value or a determination of the value of the lands as water power lands? A. Yes, sir.

* * *

[15541] CARL WILLIAM WATCHORN.

* * *

CROSS-EXAMINATION.

By MR. GOLDBERG:

* * *

[15561] Q. Why did they become so important with respect to the report for 1945, and had a minor place with respect to the preparation of the report for 1944? A. Because the determination of the dependable hydro capacity as made and reported in Schedule 16 for the 1945 report was made on a much more comprehensive and thorough basis than that made as reported in 1945.

* * *

THE WITNESS: Consequently required consideration of the factors that I stated at lines 3 to 6 on page 15157.

* * *

[15562] TRIAL EXAMINER: Why more comprehensive?

* * *

The Witness: Because it was the first time to my knowledge that all these factors affecting overall system reliability and the determination of dependable hydro capacity were taken into account in the proper manner.

By Mr. Goldberg:

Q. Now, why were they suddenly in 1945 taken into account in the proper manner while they had not been taken into account in the proper manner in the years prior to that time? A. Because as I told you yesterday, Mr. Goldberg, I figured out about the end of June or beginning in July of 1945 how to do just that.

[15563] Q. In 1945, about the end of June or the beginning of July, you had figured out a more satisfactory manner of determining dependable hydro capacity; is that it? A. A more correct manner.

Q. Up to that time you had believed the reports that had been made to the Federal Power Commission had been correct, based upon the development of the art; as you put it yesterday, up to June or July, 1945? A. In so far as I knew that development.

* * *

[15577] Q. So that it is fair to state, is it not, that this more satisfactory method could have been developed even before June or July, 1945? A. Right.

Q. You mean you could have developed it just about any time you had put yourself to it? A. No.

Q. Well, how about in 1944? Could you have developed this more satisfactory method? A. The best answer I can give you there, Mr. Goldberg, is I did not.

Q. But could have. I know you did not until 1945, in June or July for some reason, but what I am after now is could it have been developed in 1944? A. Well, in the same sense that the atomic bomb could have been developed in 1930, I guess; it just was not done.

Q. So that your answer is yes, it could have been done [15578] in 1944? A. Had I known as much in 1944 as I knew in 1945.

* * *

[15580] Q. Let me see if I can break that answer down.

In 1944 you had been working at that problem, applying your mental processes to that problem steadily for how many years? A. Off and on, for about 8 years.

Q. And in those 8 years your mental processes had been such, or had fallen short of enabling you to grasp the different concepts and evaluate them in a reasonably proper and conservative manner? A. I think it would be more proper to say to apply the concepts rather than "grasp" them. I believe that was what I said in my answer.

Q. I thought you said grasp. I had written "grasp" but all right. Apply. With that substitution for "grasp," your answer is yes? A. Yes.

Q. Now then, when you speak of different concepts, I wonder if you can name them for me, that your mental processes were attempting to apply. A. Well, the concepts were the concepts or basic principles relating to the theory of probability.

Q. The what? A. The theory of probability. Namely, that the probability that two separate events will occur or exist as of the same time is the product of the probability that each will occur or exist separately, and the other one, the probability [15581] that an event will occur or exist which may occur or exist in one or more ways is the sum of the probabilities that it can occur in each of the separate ways in which it can occur.

Q. Now, those—have you finished? A. No.

Q. I am sorry. A. Now, the other factor involved is the manner of applying those two principles of probability to the problem as a whole. One of the important considerations in that problem is the method of allowing for the schedule reserve requirement—the scheduled main-

tenance requirement both as to the system steam capacity and the system hydro capacity.

Another problem is the manner of applying these concepts to the system steam generating requirement as affected by variations in river flow.

Another factor to be considered is the effect on the steam load carrying capability of the system as affected by seasonal temperature changes. I think those are the major factors involved, together with the variation in system load from day to day and week to week throughout the period of a year as we discussed this morning, I believe.

Q. Now, then the two basic principles of the theory of probability are concepts that did not originate with you? A. No, definitely not.

Q. They are concepts that have existed for a long time? [15582] A. Oh, definitely.

Q. Your problem was how to take those concepts and use them in arriving at a satisfactory method of determining dependable hydro capacity? A. That is right.

* * *

[15587] Q. As to the extent you worked on it for eight years as set forth in your testimony, it had eluded you until June or July, 1945? A. Yes.

* * *

[15590] Q. Now, do I understand also from your testimony that this theory of probability had never entered into the determinations of dependable hydro capacity until June or July, 1945? A. I think the fair answer there is yes, Mr. Goldberg.

* * *

[15606-A] Q. Mr. Watchorn, I show you Exhibits 347 and 248 for identification and ask you if they are portions of your working papers? A. Yes, they are.

Q. And they have on them data which you used in arriving at your dependable hydro capacity of 295,000 kw? A. Yes.

Q. Now, taking Exhibit 347, Table 5, will you tell us [15606-B] what data appearing on that exhibit was used by you in arriving at your results? A. It will be noted in the upper portion of that exhibit that there are two groups of columns, one labeled "A, Turbine Forced Outage," and the other one labeled "B, Boiler Emergency Outage."

There are four columns under each of these main headings.

The data I used is the next to the last item in each of these columns labeled "Days Exposed in Period," and the six items above that item labeled "Unit Days of Outage."

Q. So that there can be no doubt as to the data you have just referred to, under the group of columns that bear the letter "A" there is a subdivision "1941, 365 units Actual and Adjusted." Do you see that? A. Yes, that is right.

Q. Now, then, in the column "Actual" you used the 1,127 as the outage days in period? A. I do not see that number, Mr. Goldberg.

Q. 1,127 in the column "Actual" under 1941, 365 units? A. No, I did not use that number.

Q. Did you use any of the figures in the two columns which are labeled "Actual" and "Adjusted" under the 1941, 365 units designation? A. No.

Q. How about the columns "Actual" and "Adjusted" in [15607] the "A" group under the collective heading 1939, 1940 and 1941, 1,033 units? A. I used there the column headed "Adjusted."

Q. I see. And in the column headed "Adjusted" you used, did you, the 3,752 and the 297,787; is that right? A. Yes.

Q. Now, under the "B" group—that is the boiler emergency outage data, did you use any of the data appearing in the columns under the collective heading "1941, 289 Boilers?" A. No.

Q. Did you use any of the figures appearing under the collective column, "1940 and 1941 555 Boilers" in the B group? A. Yes.

Q. Did you use the figures in the "Actual" or the "Adjusted" column? A. Adjusted.

Q. And in that column, are the figures that you used, the 1,657 and the 167,635? A. Yes, sir.

Q. Now, did you use any data in the "C" group, the boiler maintenance outage data? A. No.

Q. So that the only data that you used in your study that appears on Exhibit 347 are the four figures we mentioned? A. That is correct.

[15608] Q. Now, let us turn to Exhibit 348, and tell us, please, which data you used in your study from that exhibit? A. On Exhibit 348, there are three groups of columns. The first group to which I have reference is headed "Turbine Forced Outage," and the second group "Boiler Emergency Outage". Under each of these two general headings there are four columns.

The data I used are shown in the second column under each of these four column groups.

Q. That is the adjusted column? A. "Under 1,000 psi," pounds per square inch, heading. The first item shown in each of these columns that I used is labeled "unit days of outage", and the second item I used is the item headed "Days Exposed in Period".

Q. Now, then, that means that with respect to turbine forced outage, you used the figure 6,597 which appears in the adjusted column with respect to "Under 1,000 psi" and 637,269. Is that right? A. Yes.

Q. The first figure being the unit days of the outage and the second days exposed in period? A. Yes.

Q. Now, then, that is the only data appearing on Exhibit 348 that you used with respect to turbine forced outage? A. That is correct.

[15609] Q. Now, then, under boiler emergency outage, did you again use the figures appearing in the adjusted column

under the collective heading "Under 1,000 psi"? A. Yes.

Q. I take it the first figure you used was 5,519, being the unit days of outage, and the other figure 446,249, being the days exposed in period? A. That is correct.

Trial Examiner: What was that again?

Mr. Goldberg: 446,249.

By Mr. Goldberg:

Q. And the data appearing under the third group heading "Boiler Maintenance Outage", I take it you did not use at all? A. That is correct.

Q. And it is through the use of these figures we have discussed that you determined the percentage relationships? A. Yes.

Q. These data appearing on Exhibits 347 and 348 were collected by the Edison Electric Institute; is that correct? A. A committee of the Edison Electric Institute.

Q. A committee of which you are a member? A. No.

Q. Are these data that appear in Exhibits 347 and 348 published data? [15610] A. Not in accordance with my understanding of what published means, but it is data that is pertinent and available to anyone who cares to obtain copies.

Q. Can you obtain these data only by writing to the Edison Electric Institute? Is that it? Is it available in libraries? A. It may. I do not know. It depends on whether the particular library obtains pamphlets and so on, from the Edison Electric Institute or not. I do not know.

Q. Has the Institute included these data in any publications it has gotten out? A. I do not know what you mean by "publication".

Q. Pamphlets? A. Yes.

Q. Things that it prints and disseminates to the public or to the members of the industry? A. Yes.

Q. You say these can be found in published pamphlets? A. Published being used in that sense.

Q. What is the name of the publication in which these data appear? A. That is one of our difficulties as to what we mean by publication. It is the material presented relating to this subject. It isn't any periodic publication in that sense at all.

[15611] TRIAL EXAMINER: Where did you get them?

THE WITNESS: From this material that was presented or prepared by the Edison Electric Institute.

TRIAL EXAMINER: In what form?

THE WITNESS: A group of, oh, I imagine, possibly 15 or 20 pages about this size (indicating) stapled together.

TRIAL EXAMINER: With a cover?

THE WITNESS: No, my recollection is with some of the copies we had had a letter of transmittal that was sent to members of the various committees of the Institute that were known to be interested in this subject. I obtained the copies I have because of my participation as a member of this subcommittee of the hydraulic power committee.

TRIAL EXAMINER: These have never been formally published, is that the idea?

THE WITNESS: That is what I would say, yes,—not in the sense that I understand your use of the word "Published".

By MR. GOLDBERG:

Q. When did you secure these data? Was it June or July of 1945? A. Exhibit 347 was obtained some time after 1941 and Exhibit 348 was obtained in the early part, I think, of 1946.

Q. Then I take it you did not utilize these data in June or July of 1945? A. I used the data in Exhibit 347. That was explained in [15612] my direct testimony.

Q. But not the data in 348, because you did not have it? A. As of that time that is correct. The data shown on 348 in my testimony was used in connection with Exhibits 333, 334 and 345 only.

Q. Now, you have stated that the data on Exhibits 347 and 348 relate to steam equipment? A. That is correct.

Q. What data did you use for hydro equipment? A. The data that the subcommittee, of which I am a member, collected.

Q. When did they collect that data? A. I will have to check that to be sure. I think it was some time in 1932 or 1933, possibly—I mean 1942 or 1943.

Q. You say there was a subcommittee of the Edison Electric Institute? A. Well, the hydraulic power committee of the Edison Electric Institute.

Q. What is the name of the committee that collected the steam equipment data? A. There were two committees, I believe, involved in that. One was the Prime-Movers Committee and the other the Electrical Equipment Committee, I believe.

Q. And at the time of the collection of the data, were you a member of either one of the committees? [15613] A. No.

Q. Are you a member today of either one of the committees? A. No.

Q. Now, do you have with you the hydro forced outage data that you used? A. No, sir.

Q. Where is it? A. In Baltimore.

Q. Of how many sheets does it consist? A. I think there is one sheet that has the pertinent data.

Q. Does that mean you do not have your working papers here with you? A. That is correct.

Q. Is it a sheet like Exhibits 347 and 348? A. My recollection is that the data is shown as an insert down about two-thirds of a typewritten sheet of paper.

Q. An insert where? A. On the page.

Q. Was this page an excerpt from a publication? A. No, it is material that myself and Mr. Loane of Penn Water and Safe Harbor, who are the two members comprising this subcommitteee, prepared.

Q. Let me make sure that I understand that. It was [15614] the subcommittee of the hydraulic power committee of the Edison Electric Institute that collected the forced outage data on the hydro equipment? A. Yes.

Q. And that committee consisted of yourself and Mr. Loane? A. Yes. The Hydraulic Power Committee asked us to do that for them.

Q. And you think that data was collected in 1942 or 1943? A. I think that is correct.

Q. How many electric utilities did you circulate? A. I could not recall, but a great number of utilities over the whole United States and Canada.

Q. Can you be more specific about this large number? Was it 50 or less than that? A. I never thought of it just that way, Mr. Goldberg. I would have to guess. I believe I can say that every operating utility that had hydroelectric units of 5,000 kw or greater capacity responded to this questionnaire. There were comparatively few who did not.

Q. How many responses did you get? A. I do not know. A great number.

Q. Can you ascertain that? A. I could do it in the course of time, yes.

[15615] Q. What does that mean? A. Well, a day or two after my cross-examination is finished, to give me an opportunity to make the necessary investigation.

Q. Can you ascertain that information over the evening? A. No, sir.

Q. Was a questionnaire prepared to collect this data? A. Yes.

Q. Was there a definite definition of forced outage in the questionnaire? A. Yes.

Q. Do you have a copy of the questionnaire? A. No, sir.

Q. Can you secure one? A. In the course of time I can, yes, sir.

Q. Do you have one in Baltimore? A. I am sure we do.

Q. You do not think you can secure that overnight? A. No.

Q. Do you recall the definition of forced outage that you had on that questionnaire? A. Substantially the same as I gave you. As a matter of fact, I did give you the definition when you asked about the definition regarding steam turbines and steam boilers. You asked about the definition relating to hydro units at that [15616] same time.

The general scope of the definition with respect to all three matters embraced the same considerations.

* * *

[15617] Q. Now, did the Edison Electric Institute publish the compilation of the responses that you made? A. We prepared the material relating to that investigation—I mean Penn Water and Safe Harbor prepared all the material, and our material was forwarded to the Edison Electric Institute headquarters and distributed in accordance with the request expressed for that data to be made available.

Q. In other words, when someone writes to the Edison Electric Institute for that data, that data is made available then? A. At that time. Copies may have all been distributed long since, or they still may have some; I do not know.

Q. How many years did the data cover? A. That varied. Some of the utilities reported for ten years and others for a smaller number of years.

Q. And did your compilation reflect data for all of the years? A. All the years for which data was reported.

Q. Now, can you give us, or have you already told me that you cannot give me the data you used for hydro outage? A. No, all I can give you is the ratio, the 49/100ths of 1 per cent. I do not know——

Q. The figures that were involved? A. —the figures that were involved in that.

[15618] Q. Now, do you recall whether any one has submitted the data indicated who had not followed the definition of forced outages contained in the questionnaire? A. No, I am quite sure that every one did a very good job.

Q. Were there any notes on the face of the responses indicating that the definition of forced outage had not been treated as set out in the questionnaire? A. No, I cannot be sure of this, but I think some of the companies to whom we sent inquiries may have requested us for further clarification of our intended meaning, but I could not be certain of that. I think that probably was so.

Q. And then your further clarified the definition on receipt of their responses? A. We stated the same matter in another way.

Q. Now, you do not know with respect to this collection of the steam-outage data contained in Exhibits 347 and 348 whether there were any notes appended or placed on the face of the responses indicating that the definition of forced outage had not been treated in the manner requested by the directors? A. No, I would not know that. I doubt very much if any reporting company had any idea they were reporting it in a manner in any way different from that intended.

Q. Within the light of their interpretation, you mean?

[15619] A. Yes, sir.

Q. Now, then, you recall that you submitted—you said the other day—a questionnaire containing a figure with which you did not agree? A. Yes, sir.

Q. You recall, do you not, that you have appended no reservation with respect to that figure? A. Right.

Q. Now, as far as you know, some of the data submitted by companies which are included in Exhibits 347 and 348 may have been submitted with reservations which were not expressed, in the same way you submitted data with

reservations not expressed, is not that right? A. That is a possibility; yes.

Q. And that same possibility exists with respect to your hydro data? A. That is a possibility.

* * *

[15642] Q. Is the probability method of determining dependable hydro electrical capacity such as you described in your direct testimony standard practice among electrical utilities for the purpose of determining dependable hydro electric capacity? [15643] A. I think the answer to that is no. I think I should qualify that answer because, as I have stated previously, to my knowledge, my determination of dependable hydro electric capacity based on an application of the theory of probability is the first such determination, and as stated in my direct testimony, the industry is very much interested and has requested papers to be presented on that subject. As a matter of fact, the purpose of gathering this data was because the industry or members of the industry had realized there were deficiencies in determining the reserve requirements on the various systems, and they felt that a better and more scientific basis could be designed and that was the purpose for gathering this probability data.

Q. And now the industry is interested in testing whether you have improved on the deficiencies; is that it? A. Not me, no. With respect to steam capacity there are other engineers throughout the country who have made such studies at this time and this Symposium that the Power Generation Committee of the American Institute of Electrical Engineers is holding on the subject next fall or winter with the engineers from three or four other companies preparing papers on the general subject is for this purpose. However, my understanding with respect to all steam systems—Mr. Loane's and my papers are to be, as I understand it, the only papers with respect to combined hydro and steam systems.

[15644] Q. And the purpose of this symposium is to test out the developments and see how sound they are? A. I do not think there is any doubt about the soundness.

Q. Please answer my question. A. No.

Q. What is the purpose of this symposium? A. To disseminate the knowledge and information of the engineers who have been leaders in the industry in these various fields.

Q. And you are saying that the engineers undoubtedly are going to agree that your method is sound? A. No, I would be very doubtful, however, if they did not.

* * *

[15674] Q. Were the years 1942, 1943 and 1944 in terms of load shapes comparable to 1945 and 1946? A. No.

Q. Were the years 1939, 1940 and 1941 comparable to 1945 and 1946?

* * *

[15677] Q. Would you say that Mr. Spaulding's association with the work you have been doing all along on determination of dependable hydro capacity has been of such nature as to permit him to express an opinion regarding the dependability of the principles and methods? A. Very definitely. I might also add that Mr. Walls comes in that category, too, probably outside of Mr. Loane and myself, he is outstanding in these matters.

Q. Mr. Walls, you mean? [15678] A. Definitely.

Q. How about Mr. Spaulding? A. I do not think I could say that Mr. Spaulding's familiarity as to details is as great as Mr. Walls'.

Q. But with respect to the understanding of the principles and the methods involved and his ability to state their propriety, you would say he is on a par with Mr. Walls? A. Oh, I have no question whatsoever.

* * *

[15687] Q. Now, your basic data was in Exhibit 348? A. That is correct, as to probability characteristics.

Q. And the basic data of actual experience that you had was in Exhibit 348 and covered a period of five years, right? A. For turbines I think it was, yes, five years and boilers four years. Wait a minute, six years for turbines and five years for boilers.

[15688] Q. And you then, through this process you have been describing, sought to derive 100 years of experience? A. That is right.

Q. And not having a hundred years of actual experience, you went through this process you have described to establish a hundred years of experience? A. That is correct.

* * *

[15690] Q. And the experience for your analytical study, then, was based upon three years of experience for turbines, and two years for boilers, is that correct? [15691] A. Yes.

* * *

[15694] Q. Through this synthetic basis, you say that you have verified your conclusions, that dependable hydro capacity [15695] was 295,000 kw? A. It is at least that much.

* * *

[15730] Q. You have testified that the probability of [15731] unavailability of turbines is 1.26 per cent and boilers 99 per cent, based on the data you utilized, and you have also testified that subsequent data showed figures to be 1 per cent for turbines and 1.24 per cent for boilers.

Do you recall that testimony? A. That is correct.

Q. Now, that is a change of about 25 per cent on each of them? A. That is right.

Q. And you have testified that this change would result in a very little change in your final result because there was an offsetting effect; that is, one went up 25 per cent and one went down 25 per cent. Right? A. That is correct.

Q. Are we to understand that in your opinion data based on 3 years of records which can change in two years as much as 25 per cent is reliable data for a highly theoretical mathematical analysis? A. Again I can't answer that question directly without qualifications.

Q. You mean you would have to say "yes, but"? A. No, I couldn't even say "yes."

Q. You mean you would have to say "no, but"? Go ahead. A. The data relating to the curve shown on the right, [15732] both curves shown on Exhibit 336, was computed sometime in August or September of 1945 on the basis of the forced outage experience data shown on Exhibit 347. When the data shown on Exhibit 348 became available in the early part of 1946, January or February, I believe, it was originally my intention to recompute the curves shown, the data for the two curves shown on Exhibit 336. But, fortunately, the characteristic was apparent in those two sets of data that you have just mentioned, Mr. Goldberg, which meant it would not be necessary to make a recomputation of the data for the curves on 336.

Now, the fact is that each of the data just shifted by about a quarter of one per cent in the two-year period, and must be related to a five-year period in one case and a six-year period in another case, as it was the intention—I don't know whether that intention has as yet been altered—for the Edison Electric Institute as of the present time to gather no further forced outage data with respect to turbines and boilers than that shown on Exhibit 348, the opinion apparently being that the statistical basis for these data is reasonably satisfactory and presents a reasonable sample of what could be expected even though a larger number of years may be accumulated.

For example, any one particular year may show a very great divergence from the quantities of one per cent—what [15733] was it, turbines?

Q. Turbines, 1.26 to 1 per cent. A. One per cent for turbines and 1.24 per cent for boilers, but when you average the experience of one year with the accumulated experience with respect to turbines of six years or with respect to boilers of five years, the results for year-to-year changes are by increasingly insignificant amounts as the greater amount of data are collected.

Q. You have no further assurance that additional records may not change the percentage by an equal amount for turbines and boilers in the same direction.

Here you have been going in opposite directions, but you have no assurance in the future that the change won't be in the same direction. A. I am quite confident, Mr. Goldberg, that these data related to these different years specified showed an increase and decrease from year to year. They may have over the period in which the data were taken showed a general trend downward or a general trend upward.

Q. Are you telling us that you made an analysis of the data that you used to state that year by year there has been an offsetting increase or decrease? A. No. I would be very much surprised if that wasn't so. That is all I am trying to tell you.

* * *

[15743] J. RHOADS FOSTER.

* * *

DIRECT EXAMINATION.

By Mr. Sparks:

Q. Mr. Foster, your name is J. Rhoads Foster and you have previously testified in this case on the subject of fair rate of return? A. That is correct.

Q. Are you familiar with Exhibit 46 which was sponsored by Staff witness Samuel Joseph in this proceeding? A. I am.

Q. Have you read the testimony of Mr. Joseph, who presented Exhibit 46? A. I have.

Q. Are you prepared to discuss that testimony and the exhibit in relation to the determination of the fair rate of [15744] return to Penn Water? A. I am.

* * *

[15746] Q. What are your general conclusions based on this study of Exhibit 46 and the related testimony of Mr. Joseph? A. First, Exhibit 46 is the result of applying erroneous and inconsistent theories ~~of rate~~ regulations.

Second, Exhibit 46 is not comprehensive and fails to afford the Commission "a sound basis for the exercise of judgment in the establishment of fair rate of return" for Penn Water, but instead places an awkward and unreasonable burden on the Commission.

Third, Exhibit 46 contains numerous errors of execution; [15747] some of its parts do not reflect the standards of workmanship and technical proficiency which are necessary to give the results significance, even if valid and consistent theories had been applied in its preparation.

Q. Leaving aside for the moment any consideration of the erroneous theories of rate-making which have been recognized and applied in the preparation of Exhibit 46 have you examined that exhibit and the related testimony with regard to technical competence, and correctness of data presented? A. I have made such an examination limited to pages 38, 38 (a), 38 (b) to 38 (c) and page 40 of Exhibit 46.

Q. What principal error of method did you find with respect to page 38 (a) of Exhibit 46? A. The principal error of method is the failure of the witness to take either one or the other of two steps which might have given significance to the data. Because of that failure, the data presented on page 38 (a) are without significance for the purpose of estimating the cost of equity capital, as of March 30, 1946, or other recent date, to either Penn Water or to the other companies represented on page 38 (a).

The earnings-price ratios are stated by the witness on the basis of reported equity income for the most recent period prior to March 30, 1946, for which earnings data were available, and the number of shares outstanding at the end of that period, without either critical analysis or [15748] adjustments in recognition of changing circumstances.

The first alternative is to base earnings-price ratios on reported income, without adjustments, but at the same time to provide a collateral analysis of the manner and extent to which such earnings-price ratios fail to reflect actual investor appraisals. Such an analysis of the related circumstances should indicate generally their quantitative importance as well as the direction of their influence. An example of such related circumstances is the increase in prospective income resulting from the revision of the federal income tax laws in November, 1946.

Q. Dr. Foster, at page 10381—lines 15 and 16—of the Transcript, Mr. Joseph, speaking of the investor, said that "He buys the stock on the basis of the relationship of anticipated earnings to price," did he not? A. Yes.

Q. At page 10383 of the Transcript, with respect to recognition of what Mr. Joseph characterized as "innumerable circumstances," he said: "You would be substituting your judgment for the judgment of the market place, and you could never be sure that what you were doing came close to accomplishing what you hoped you were doing." Is that last statement in error? A. It is.

Q. In what respect? [15749] A. The recognition of changing circumstances is not a substitution of the judgment of the analyst for the judgment of the market place. The purpose of the recognition of changing circumstances is to provide a reasonably accurate and useful estimate of what the judgment of the market place actually is at the time.

Exact or precise estimates of investors' appraisals at a given time is admittedly impossible. However, reason-

ably significant and useful estimates are not impossible, and the fact that the task of analysis is difficult, is no reason for limiting the analysis, as it has been limited in connection with page 38 (a) of Exhibit 46, by use of methods that provide only grossly misleading results. Even the crudest recognition of the effect of changing circumstances would tend to avoid such absurdities as earnings-price ratios, presented as a basis for rate of return determination, which are below the yields on preferred stocks of the same companies at identical dates.

This phenomenon is observed by a comparison of the earnings-price ratios of Bangor Hydro and Southern California Edison as they appear on page 38 (a) with the preferred stocks of the same companies as they appear on page 38 (c).

However, the circumstances which have caused this phenomenon, a reversal of the usual relationship between the earnings-price ratios and yields on preferred stocks of the [15750] same companies, are not unique to these two companies but tend to be common to all companies shown on page 38 (a).

The low level which is common to the earnings-price ratios on page 38 (a) is misleading and results from employing a method limited to consideration of reported past earnings per share with no consideration of the prospective earnings which are actually reflected by the market price.

Q. Have you examined the statements of Mr. Joseph at page 10428 (lines 7-17) of the Transcript which reads as follows:

> "Q. You just accepted figures from the source which you used. Is that correct?
>
> "A. I accepted the published figures; yes, sir.
>
> "Q. You made no adjustments of any kind. Is that correct?
>
> "A. Because I thought it would be improper to do so.

"Q. And you accepted those figures without any question in your mind. Is that correct?

"A. That I was doing the right thing; yes, sir."

A. I have.

Q. Do those statements describe a proper use of the published data available for estimating investor appraisals? A. No.

Q. Why not? A. Mr. Joseph accepted as equity earnings, without [15751] analysis, net income as shown in the statement of income for the past accounting period, or net income less preferred dividends paid during the accounting period. All the other data contained in the reports of the companies, the letters to stockholders, footnotes to the financial statements and certifications by the public accountants, are published data. Mr. Joseph accepted the one published figure but he did not accept or consider the related and qualifying data and information.

The financial analyst must start with the published reports of actual results of operations for the accounting period. He recognizes the facts to which his attention is in part called by the published reports, changing conditions and past or prospective events, and adjusts the past earnings in order to arrive at his estimate of prospective earnings. The functions of the rate of return analyst are not to estimate future earnings of the companies subjected to analysis. It is to measure or estimate, as closely as may be possible, investor's appraisals of such investments.

Mr. Joseph thought that it would be improper to make any adjustments of the reported earnings figures, yet he recognized that the investors begin with reported earnings and make adjustments which they consider appropriate for the purpose of estimating future income.

Therefore, for the purpose of indicating investor's [15752] appraisals, it is proper and necessary either to make adjustments of reported earnings in computing earnings-price ratios or to analyze the circumstances which affect the validity and meaning of the earnings-price ratios

calculated without reflecting such adjustments. During the war or early post-war period, events and changing conditions have had unusual and substantial effects on the prospects of earnings.

Q. Have you examined the statement by Mr. Joseph at pages 10461 and 10462 of the Transcript, lines 13 to 25 and 1 to 11, which reads as follows:

> "Q. Well, which is the best indication of the prospective equity income, Mr. Joseph, that remaining after you deduct the $308,000 or that which would remain after deducting the $400,000?
>
> "A. Well, Mr. Sparks, I think that the adjustment that you are suggesting would be erroneous to make in the exhibit that I presented. Nothing is clearer in my mind than that the figures presented on page 38-A are subject to change in subsequent years. Some of the items that you have called to my attention will produce such changes, but it is by no means clear that you are pointing to all of the items, nor would the changes that you have asked about produce a more reliable showing than the one I have [15753] presented. Let's put it this way: Assume that I had made all of the changes that you have spoken to me about. I don't want to say that you have suggested, but that you have called my attention to. I would then say that if I had made those, my presentation would be subject to very grave criticism. I will say further that having had my attention called to the items that you have cross-examined me about, it is my judgment that I would not today make any change by reason of any of the items that you have asked me about, that if I made such change it would tend to impair the validity, would go further than tend to impair, it would actually impair the validity of my presentation."

A. I have.

Q. Is it a correct statement? A. No, it is wrong in several respects.

Q. What are the errors? A. Certainly in estimating prospective income and appraisals, common stock investors consider the existing requirements of bonds and preferred stock, which must be met before any equity income may be expected. They do not consider the interest and preferred dividend requirements which existed at some time in the past.

Mr. Joseph's remarks in this paragraph suggest the [15754] reason why his method failed to provide on page 38 (a) earnings-price ratios which have, without consideration of other data, significance for the purpose of rate of return determination.

He says, First, "Nothing is clearer in my mind than that the figures presented on page 38-A are subject to change in subsequent years."

I certainly agree that the earnings-price ratios change from year to year. They change from month to month, sometimes as rapidly as from an average of 12.9 per cent in March, 1942, to 7.6 per cent a year later.

At the same time Mr. Joseph asserted that if he made any change to recognize non-recurring items or changing circumstances "it would actually impair the validity of my presentation."

It may be true in a sense that a presentation of arithmetic ratios, such as those on page 38-a, between earnings as reported for past accounting periods and market prices for a single day, would be impaired by recognition of any related facts. The purpose of pages 38 and 38-A should be to present not mere arithmetic ratios but to present ratios useful in the process of rate of return determination. It is the purpose of rate regulation to fix reasonable rates for a significant period in the future. The ends of reasonable rate regulation certainly are not ill served or [15755] pertinent data impaired by a consideration of the reasons for the wide fluctuation of the earnings-price ratios.

Q. Have the earnings-price ratios for the common stocks identified on page 38-A computed by use of the

method employed by Mr. Joseph, remained at the levels shown on page 38-A? A. No, they have increased substantially. As an extreme illustration, the earnings-price ratio for the Bangor common stock was shown by Exhibit 46 as 3.83 per cent as at March 30, 1946. The earnings reported for the year 1946 were $3.06 per share and the bid quotation at the end of January, 1947, was $32; the relationship is an earnings-price ratio of 9.6 per cent.

Q. What are some other illustrations of the fluctuations in the earnings-price ratios shown on page 38-A since March 30, 1946? A. The earnings-price ratio for Consolidated Edison which appears on page 38-A and which was revised to 5.05 per cent was 8.0 per cent on the basis of the market price on March 24, 1947, and earnings per share as reported for the year 1946.

On the same basis the earnings-price ratio for Indianapolis Power and Light Company fluctuated from 6.09 per cent to 10.3 per cent.

Q. May these earnings-price ratios of the more recent dates be taken as measures of the cost of equity capital to [15756] three companies? A. They may not without consideration of their meaning and significance, and analysis of the reasons for their long term fluctuation and behavior.

Q. Have you examined the statement of Mr. Joseph at page 10420 of the transcript that it is not correct to state that the actual income of Commonwealth Edison for 1945 was $7,490,716 in excess of the $24,577,746 shown by page 38-A of Exhibit 46 and the statement:

> "Well, you are here asking me to say that the actual income of the Commonwealth Edison Company is different from what Commonwealth Edison says its actual income was and what Arthur Andersen and Company certifies its income as having been. Now, I don't think I could go along with you on that."

A. I have.

Q. Are those statements correct? A. No.

Q. Why? A. The financial reports of a corporation state its income for a given accounting period, subject to generally accepted accounting conventions, practices or regulatory rules. Accounting statements of income undertake to reflect but do not change the financial facts.

In 1945 Commonwealth Edison experienced a "windfall" in [15757] amount of $7,490,716 in the form of income tax reductions resulting from unusual deductions from taxable income. Income, measured by the increase of corporate assets during the period, was $7,490,716 greater than would have been the case if the unusual deductions had not been available. Income as reported by the company to its stockholders was "normalized" however, by including in the income statement charges against income totaling $7,490,716 and labeled "charges equivalent to Federal tax reductions."

Q. Were the equity earnings used on page 38-A for Commonwealth Edison and Pacific Gas appropriate for the construction of earnings-price ratios in so far as those earnings reflected the treatment of tax windfalls experienced during 1945? A. Yes, but the use of these earnings figures happened to be correct only because in the preparation of the published income statement the actual earnings happened to have been adjusted, for general accounting purposes, in a manner which gave results appropriate for the purpose of page 38-A.

Q. Are you familiar with the statement of Mr. Joseph at page 10508 of the transcript, lines 3-7, which reads as follows:

> "Q. Mr. Joseph, if public accounts—accountants prior to 1945 had abandoned the practice of making charges in lieu of taxes would you have accepted the actual reported earnings for the purpose of computations [15758] on page 38-A?
>
> "A. Yes."

A. I am.

Q. Does this statement reflect the use of appropriate methods of calculating earnings-price ratios for the purpose of pages 38 and 38-A? A. No.

Q. Why? A. That statement reflects a clerical approach which precludes the use of analytical methods. The common stock earnings of Pacific Gas and Electric Co. for 1945 are shown on page 38-A of Exhibit 46 as $13,523,200 which is after the subtraction of the tax windfall of ~~windfall~~ of $10,286,461 made in the income statement as published. If the subtraction, in the form of charges in lieu of taxes, had not been made in the income statement, the reported earnings would have been $13,523,200 plus $10,286,461 or $23,809,661 and undoubtedly the facts as to the tax windfall would have been set forth in a footnote. The facts would have been the same and the prospects of future income would have been no more or less because of the change in form of financial statement. Yet the earnings-price ratio resulting from the application of Mr. Joseph's method, that is, his uncritical acceptance of the published figures, would have been 75 per cent higher, merely because of the form in which the facts happen to be [15759] reported.

This undue respect for the form as distinguished from the facts and substance of published information has resulted in inconsistent treatment of similar items in the preparation of the data presented by pages 38 and 38-A.

Q. Will you illustrate what you mean by this last assertion regarding inconsistent treatment of similar items? A. Published statements of income often are not "normalized" as they were in the case of the Commonwealth Edison and Pacific Gas, to eliminate significant effects of "windfalls" or other non-recurring situations.

For instance, the income statement of Idaho Power Company for 1945 was not in a form comparable with those of the two last-named companies with respect to treatment of tax windfalls. Non-recurring income amounting to 50 cents per share, representing the effect on income

taxes of recomputation of amortization of war emergency facilities and related to previous years, was included in the earnings of $1,316,336 shown by page 38-A.

The acceptance of the published figures in the computation of earnings-price ratios shown on pages 38 and 38-A disregarded many other kinds of non-recurring effects on income, such as, the write-off of abandoned property and profit from the sale of a radio station, which had been credited to income instead of surplus.

[15760] Q. As another illustration of the uncritical acceptance of published earnings per share, have you examined the testimony of Mr. Joseph at page 10459 where he said that in stating the earnings-price ratio for Commonwealth Edison on page 38-A he should not have made an adjustment for the call of the convertible debentures of that company and the following questions and answers on pages 10459 and 10460:

"Q. Wouldn't the number of shares, Mr. Joseph, which would be issued in the conversion dilute the per-share earnings?

"A. Yes, it would.

"Q. Would that dilution affect the earnings-price ratio of the company which you have shown?

"A. Not the one that I have shown. It might have an effect upon subsequent ratios.

"Q. Wouldn't it affect the meaning and the significance of the earnings-price ratios which you have shown?

"A. No, sir."

A. I have.

Q. Is Mr. Joseph correct in stating that the call of the debentures would not affect the meaning and significance of the earnings-price ratio? A. He is not.

Q. Why? [15761] A. The debentures were called on January 23, 1946, for redemption on March 9. On March 30 the date for which Mr. Joseph determined the market price of the common stock, the number of shares

outstanding had increased by 710,864 shares, as the result of the conversion, over the number outstanding on December 31, 1945. The interest of the previously outstanding shares in income was diluted.

The earnings-price ratio shown by page 38-A was incorrectly determined, since on March 30 the additional number of shares already had been issued and Mr. Joseph's calculation did not reflect the number of shares then actually outstanding. Thus, Mr. Joseph related the market price at March 30, to the situation existing prior to the conversion and not to the changed situation which existed at the time the price was esablished.

Of course, the effect on the meaning of the earnings-price ratios is not limited by the fact that the conversion actually took place prior to March 30. The effect would have been similar if the conversion had been in prospect prior to that date and had actually occurred at a later date.

Similar inadequacies are involved in any other failure to recognize or consider the effect of significant changes in capitalization, such as refinancing of debt or preferred stock, which are experienced during the accounting period or which are definitely anticipated at the date for which [15762] market prices are used. Since 1940, such changes have been numerous in the capitalizations of the companies represented on pages 38 and 38-A.

Q. Have you examined the statement of Mr. Joseph at page 10900 of the transcript—lines 11-16, that:

> "Well, as I remember it, for one thing the elimination of the preference common would have meant the elimination of the entire Philadelphia Electric Company statistics, because the information is not available for the preference common separately. I think that was the situation then, even if it isn't now."

A. I have.

Q. What are the facts as to the nature of the security and the availability of information? A. In spite of its name, this stock is not a common stock, but a cumulative

convertible preferred. The error due to misclassifications of this stock tends to reduce the earnings-price ratios in all months prior to about October, 1945, when the one-for-one conversion ratio between the market prices of the two issues was first reached. From that date, it is not incorrectly included among the common stocks, which is equivalent to assuming conversion of all outstanding shares of the so-called preference common.

The information was at all times available separately [15763] for the $1 preference common.

At no time was non-availability of information a valid reason for including this stock among the common stock on page 38-A. The lack of error in result after October 1945 is neither because the preference common is a common stock nor because information was unavailable. The lack of error is due to the happenstance that the conversion ratio was reached for the first time about October 1945.

Q. I call your attention to the statement by Mr. Joseph at page 10934 of the transcript—lines 17-19, as to his reason for not making any adjustment for the participating right of the 5 per cent preferred stock of Southern California Edison, that: "There is no right in the preference stock until the common stock receives a dividend which vests the right, so it seems to me, in the preference stock"? Is that a correct statement? A. In my opinion it is a correct statement but not a reason for failure to recognize or consider the participating right of the preferred stock in determining the earnings-price ratios for the common stock. The right of the 5 per cent preferred stock to receive participating dividends in excess of 6 per cent, is limited by the fact that the right does not exist until the common receives a dividend (in excess of 6 per cent) which vests the right. It is equally true that the right of the common to receive higher dividends is limited [15764] by the fact that it cannot do so without vesting a corresponding right in the preferred. Thus, the value to common stockholders of the retained income is affected by the con-

tinuing participating right of the preferred. The prospective productive capacity of retained income does not have the same value to the common stockholder as it would in the absence of the right of the preferred to participate.

Therefore, it is improper to treat the $5,472,196 in entirety as earnings applicable to the common stock.

Q. Have you examined the testimony at page 10976—lines 22-25 of the transcript:

> "Q. Now let me see if I understand you. For the purpose for which you have offered page 40 of Exhibit 46 should those issues, which bear note No. 1, have been excluded?
>
> "A. Yes."

A. I have.

Q. What is the footnote No. 1? A. It identifies offerings of shares already outstanding, which were being sold by a parent company or otherwise, and which did not represent new capital to the utility.

Q. How many common stock issues are listed on page 40 of Exhibit 46 as having provided new equity capital to electric utilities during the period 1935-1945, inclusive? A. Eleven, if the issue by Florida Power Company in [15765] October 1945, which is incorrectly labeled as not representing new financing, is included.

Q. For how many of the eleven are earnings-offering-price ratios shown? A. Eight.

Q. What is the aggregate of net proceeds representing new capital realized by the eight electric utilities during this period, according to the information supplied by page 40? A. Not more than $21;000,000.

Q. What is the average dollars of new capital realized per offering over this period? A. About $2.5 million.

Q. Do the earnings-offering-price ratios for these eight instances provide a useful indication of the cost of equity capital to electric utilities in general or to Pennsylvania Water & Power in particular? A. They do not.

Q. Why? A. The number of instances and the amounts realized per issue are too small, and the diversity of risk characteristics are too great to permit significant conclusion. In any case, the significance of the earnings-offering-price ratios presented on page 40 is impaired by errors committed in their determination.

[15766] Q. Have you examined the statement by Mr. Joseph at page 11028—lines 7 to 10 of the transcript which reads as follows:

"Q. What you really show there for Sioux City, Mr. Joseph, instead of earnings-offerings price ratio, you merely show earnings-price ratios as you show on 38-A, don't you?

"A. Yes, it is very much closer to that."

A. I have.

Q. Is this a correct statement? A. No. The ratio of 9.55 per cent shown in column L for the Sioux City common stock is neither the same kind of ratio as the earnings-price ratios presented by page 38-A nor is it the same kind of ratio as those presented by page 40. It is a hybrid ratio without meaning for either purpose.

Q. Have you examined the testimony of Mr. Joseph with respect to the data presented on the last line of page 40 beginning with page 10,979? A. Yes.

Q. Will you state as concisely as possible the facts with respect to the issue of common stock by Sioux City Gas and Electric Company? A. The common stock outstanding immediately prior to the financing transactions was 118,938 shares of $25 par value stock.

[15767] The old $25 par value common stock was eliminated and two shares of new $12.50 par value common stock were exchanged for each of the 118,938 shares of old common stock outstanding. An additional 118,938 shares of $12.50 par value stock was issued. Therefore, upon completion of the common stock financing transactions, 356,814 shares of $12.50 par value were outstanding, of which 118,938

shares represented new capital and 237,876 shares represented the old capital previously represented by 118,938 shares of $25 par value.

The total number of shares offered and underwritten was 153,006. This total consisted of 34,068 shares already outstanding, after the two for one exchange, and being sold by Iowa Public Service Company and the 118,938 shares of the new issue, subject to rights of common stockholders, other than the Iowa company to subscribe to 101,904 shares. The 51,102 shown on page 40 was the number of shares not included in the subscription offer.

The bid quotations for the old $25 par stock were 38.5 at the end of September, 1945; 45.5 at the end of October and 52.5 at the end of November.

The new shares of $12.50 par value were offered to the public at 28⅞; the bid quotations on the new shares in the market were 28¼ at the end of December, 31 at the end of January, 1946 and 28.5 at the end of February.

Q. How did Mr. Joseph determine the ratio of 9.55 per cent for Sioux City shown in the last column on page 40? [15768] A. Mr. Joseph used earnings per share of $2.76, determined by dividing income of $328,351, reported for the 12 months ended October 31, 1945 by the 118,938 old, $25 par value, shares then outstanding—Moody's Supplement, P. 1642, Dec. 12, 1945. He divided these earnings of $2.76 per share by $28.88, the offering price to the public of the new $12.50 par value shares, to obtain the ratio of 9.55 per cent shown in the last column on page 40.

Q. What were the earnings per share prospectively available to the new $12.50 par value shares? A. The application of proceeds from the common stock issue was principally to redeem outstanding 4 per cent mortgage bonds and 7 per cent preferred stock. New 2¾ per cent bonds and 3.90 per cent preferred stock was issued in principal amounts less than the principal amounts redeemed.

Therefore, the prior capital requirements were reduced by the series of transactions. The prospectus dated Dec.

12, 1945, includes at page 8 "a summary of pro forma statements of income" which indicates, for the 12 months ended August 31, 1945, equity income of $580,000 on the basis of the pro forma interest and preferred dividends, and equity income of about $793,000 if the Revenue Act of 1945, enacted November 8, 1945, had been in effect for the 12 months' period.

Q. What is the earnings-offerings price ratio for the Sioux City common stock on the basis of the pro forma income? [15769] A. If determined on the basis of prospective income of $793,000 the earnings-offering price ratio is 7.7 per cent.

It should be understood that this basis reflects adjustment for the change in Federal income tax rates, but does not reflect the prospective income producing capacity of the approximately $412,626 of additional capital realized from the transactions or any other prospective change in circumstances not reflected in the pro forma statement.

Q. Have you examined the statement of Mr. Joseph at page 10989 of the Transcript—lines 3-6 that:

> "I related the earnings on the old shares, the price from the old shares determined on the price which people pay for different but similar shares."

A. I have.

Q. Were the old Sioux City $25 par value shares similar to the new $12.50 shares? A. No. They were quite dissimilar.

Q. Should the earnings per share on the old shares have been related to the offering price of the new shares for the purpose of determining ratios? A. No, the earnings per share on the old shares should have been related to the market price of the old shares.

Q. Why? A. The purpose of determining earnings-price ratios [15770] or earnings-offering price ratios is to indicate investor appraisals. The earnings per share on old shares related to the offering price of new shares indi-

cate neither appraisals of the old investors nor appraisals of the new investors, unless by accident.

Q. At page 11,609 of the Transcript—lines 17-24, referring to the earnings of 71 cents per share and the earnings offering price ratio of 4.44 presented on page 40 for the Central Vermont Public Service Corporation offering of 194,295 shares in December, 1943, Mr. Joseph said:

> "Q. Well, let me ask you this then: Shouldn't you have used the prospectus and the $1.53 which is shown in the prospectus instead of the 71 cents which is shown on page 40?
>
> "A. I will have to say that the $1.53 on the basis of my present recollection would probably result in a more accurate earnings-price ratio than that which is shown on page 40."

What should have been the earnings-offering price ratio to be shown in Column L, if the earnings shown in Column K are properly stated as $1.53 per share? A. 9.56 per cent.

Q. Do you agree that use of the $1.53 "would probably result in a more accurate" earnings-offering price ratio? A. I would say that it is more than a probability. [15771] The 4.44% is completely erroneous and without significance.

Q. Why do you say that the 4.44 per cent is completely erroneous? A. The earnings of 71 cents per share, upon which the earnings-price ratio of 4.44 per cent is based, represents equity income of $228,003 for the 12 months ended 2/28/44, divided by the 323,000 shares outstanding as at that date.

The 323,000 shares were the number of shares outstanding after completion the previous December of transactions in connection with a plan under Section 11 (e) of the Holding Company Act filed with the SEC. The reported income for the 12 months ended 2-28-44, however, did not

reflect, except in minor part, the conditions created by the transactions incident to the Section 11 (e) plan.

Prior to the delivery of this common stock to the purchasers Twin State Gas & Elec. Co. had been merged with Central Vermont, the Vermont and New York properties of Twin State Gas and Elec. Company had been acquired by Central Vermont and $500,000 principal amount of 3¼% bonds had been sold.

The balance of income after preferred dividend requirements applicable to the property of Twin State to be merged is shown by the pro forma income account contained in the prospectus (p. 38) before adjustment, as $286,280 for the 12 [15772] months ended August 31, 1943.

The $228,003 of equity income for the 12 months ended February 28, 1944, used for the purpose of page 40 of Exhibit 46 was not reported for more than three months after the sale of the Central Vermont common stock. The use of this earnings figure was erroneous in that respect, since, even if it had been related to the property representd by the common stock, it would be information not available until after the date of offering. The $228,003 of equity earnings, however, reflected only the operations of the Central Vermont properties for the period prior to the merger in December and did not include income from operations of the acquired properties.

The facts were readily available from the prospectus and the prospectus was readily obtainable.

Q. Dr. Foster, are you familiar with the statement of Mr. Joseph at page 1000 of the transcript that in his opinion Exhibit 46 "furnishes the Commission with a comprehensive statistical background, and affords a sound basis for the exercise of judgment in the establishment of fair rate of return" for Penn Water and Susquehanna Transmission Company of Maryland? A. I am.

Q. Is that statement of Mr. Joseph's correct? A. No.

[15773] Q. Why? A. Regardless of its physical volume, Exhibit 46 does not include the information that would provide for the Commission an adequate and sound basis for the exercise of judgment in the establishment of a fair rate of return for Penn Water.

In my opinion, no regulatory commission, however expert or experienced, could establish a fair rate of return for Penn Water, or any other utility company on the basis of the information and analyses contained in Exhibit 46 and the related testimony.

Q. Have you considered in this connection the testimony of Mr. Joseph at page 9936 of the transcript that the charts and tabulations in Exhibit 46 are the same as, or are similar as to the nature of their contents, to the exhibits with respect to fair rate of return presented in other electric utility proceedings before the Federal Power Commission? A. Yes.

Q. Does this use of similar exhibits in prior proceedings influence your opinion as to the adequacy of Exhibit 46? A. No.

Q. Why not? A. Charts and tabulations which are presented in [15774] substantially unchanged form from one rate proceeding to another, aside from being brought down to date, may indicate trends in the securities markets, assuming that the data are prepared in a workmanlike manner.

Such charts and tabulations, however, are not designed either (1) to present facts as to the capital costs actually experienced by the particular utility for which the fair rate of return is to be established or (2) to present evidence of investors current appraisals of the particular utility, or (3) to disclose the risk characteristics which differentiate the particular utility from other enterprises and which must be known if the cost of its capital is to be estimated by comparison with the costs being experienced by other enterprises.

Q. In this connection, have you considered the statement by Mr. Joseph at page 9956 of the transcript—lines 18 to 23—that "returns required by investors depend upon the investors' appraisals of the risks present in the investment", and the statement by Mr. Joseph at the top of page 9958 that "the cost of capital depends upon the investor's appraisal of the risks present in the investment"? A. Yes.

Q. Does Exhibit 46 include any data as to the investor appraisals of the risks present in the Penn Water investments? A. Exhibit 46 does not by design include any indication of [15775] investors appraisals or of the costs of capital unique to Penn Water.

Q. Will you please explain that answer? A. Penn Water is not identified on any schedule or chart of the exhibit except on page 38-A. On page 38-A the earnings-price ratio for the Penn Water common stock is supplied on the basis of the market price for a single day, but apparently because the Penn Water common stock happened to be in a group used in this exhibit and in previous similar exhibits for the purpose of constructing an index of earnings-price ratios.

In the presentation of the trend series on page 38, however, the Penn Water earnings-price ratios, although readily available from the working papers, are submerged and concealed in weighted averages which are dominated by the large utilities.

Q. I call your attention to several statements by Mr. Joseph. At page 11,591 of the Transcript, lines 10-13 he stated:

> "Credit would be that element which permits the utility to proceed in its operations without financial embarrassment, and which enables it to raise the money necessary for the proper discharge of its duties."

At the bottom of page 11,591 and at the top of page 11,592, Mr. Joseph [15776] stated:

"I can gain a pretty fair idea of the credit of an enterprise by the relationship of the prices of its securities with the relationship of the prices of other similar securities.

"Q. So that it is correct to say that the measures of the credit of an enterprise are the yield rates at which creditors buy bonds as well as the earnings-price ratios, if those earnings-price ratios express the prospective return basis upon which the stock is sold in the market?

"A. I think that is a fair statement, yes, sir."

Further at page 11,594 of the transcript he stated referring to a quotation from the F. C. C. rate of return report:

"It is believed that the financial and operating characteristics of a particular utility eventually dominate the investing public's evaluation of its securities is quite true."

Are the propositions set forth in the statements which I have just read as to the determinants of investor appraisals and the credit of an enterprise reflected in Exhibit 46? A. No.

Q. In making your statement that Exhibit 46 does not provide for the Commission an adequate and sound basis for the exercise of judgment have you considered the testimony of [15777] Mr. Joseph at pages 10,954 and 10,955 as follows:

"Q. What is the significance and meaning of the earnings-price ratios shown in the last column of page 40 of Exhibit 46 for the purpose of the determination of the fair rate of return to Penn Water?

"A. Here we have a list of all of the common stocks of Electric operating utilities offered to the public during the period 1935 to 1945. The last column shows the earnings-price ratio as at the time of the offer. Looking at that column you have a view of cost

of capital on common stocks to these utilities. This, then, combined with the information shown at pages 38 and 38 (a) would give you an idea of what rate should be allowed on the equity of Pennsylvania Water and Power in a rate proceeding.

"Q. How would you get an idea of what should be allowed, Mr. Joseph, in that respect by examining the earnings-offering price ratio shown in the last column of page 40?

"A. Well, your own mental processes would determine that. You are interested in finding out what is fair to allow for Penn Water. Well, you say, in accordance with the Bluefield case and in accordance with the theory generally, 'We will allow what investors seem to be requiring.' You look at page 40 and pages 38 [15778] and 38-A, make up your mind as best you can what that requirement is."

A. I have.

Q. Do those statements correctly describe the use of pages 38, 38-A and 40 for the purpose of determining the equity capital component of a fair rate of return to Penn Water? A. No.

Q. Why not? A. I know of no "mental processes" by which it is possible from examination of pages 38, 38-A and 40 of Exhibit 46 to determine or even approximately estimate what "investors seem to be requiring" from investments in Penn Water.

The function of expert testimony is to present the facts and analyses which facilitate a considered exercise of judgment. The purpose is not to tell the Commission what to do, but it is not sufficient to present a mass of partially unrelated and wholly undigested facts and say "make up your mind as best you can."

Assuming the experience of the Commission in the particular field, its expertness and capacity for qualitative judgment, the exhibit provides no factual basis for evaluat-

ing the risk characteristics unique to Penn Water. Neither does it provide any factual basis for estimating the bias introduced by choices of method. For example, the [15779] low-earnings-price ratios shown on page 38-A are substantially the result of choice of method.

Q. Have you considered the statement by Mr. Joseph at the bottom of page 10,958 and the top of page 10,959 that Exhibit 46 meets the requirements of the Bluefield decision that: "A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties." A. I have.

Q. Is that statement of Mr. Joseph's correct? A. No.

Q. Why not? A. Neither in connection with the earnings-offering price ratios presented on page 40 or the earnings-price ratios presented on pages 38 and 38-A, nor in connection with the yields on bonds and preferred stocks shown elsewhere in Exhibit 46, is there identification or attempt at identification of enterprises which have risks and uncertainties corresponding to those of Penn Water.

Q. At page 10,960 Mr. Joseph said that all of the companies on page 40 of Exhibit 48 are companies comparable [15780] to Penn Water so far as risks and uncertainties are concerned as that latter term is used in the Bluefield case. Is that statement correct? A. No.

Q. Why not? A. The range of the differences shown on page 40 among the ratios of earnings to offering price, upon which the common stocks were purchased by investors is a sufficient demonstration of the fallacy of the assertion. Omitting the 4.44 per cent in the case of Central Vermont Public Service Corporation, which is an error, the range is from 5.37 per cent in the case of the Derby Gas

and Electric Corporation issue, with 7 instances higher and 12 instances lower than 9 per cent.

Q. At page 10,962 Mr. Joseph said that the requirements of the Bluefield decision, where it refers to investments in companies having corresponding or comparable risks and uncertainties, are satisfied by a presentation of data for companies merely of the same general class, that is, electric operating utilities having risks and uncertainties corresponding or comparable to Penn Water's risks and uncertainties? A. No.

Q. Will you please explain your answer? A. Operating electric utilities, although supplying generally the same type of service, vary widely from Penn Water as to risk and uncertainty. The latest available [15781] Directory of Electric Utilities in the United States, published by the Federal Power Commission, lists 1150 privately-owned electric utilities, not including industrial organizations furnishing energy to others as an incidental part of their operations.

This total includes enterprises of the most widely diverse investment and operating characteristics. The enterprises identified on page 40 of the exhibit as having issued common stocks from 1935 to 1945 are Class A or B electric utilities.

There were a total of 322 Class A and B electric utilities in the United States at December 31, 1945. They include widely divergent operating, market, managerial, and investment situations. The differences in credit standing among utilities supplying a given type of utility service, such as electric, are far greater than the average differences among electric, gas, telephone or water utilities as classes.

Q. Are all the bonds listed on pages 23 and 28 as having been issued by electric operating utilities during the years 1941 to 1945, inclusive, comparable as to quality with the outstanding Penn Water bonds? A. No. The bonds listed on these pages are assigned ratings varying from Aaa

to Baa and the yields at offering price varied from 2.55 per cent to 5.15 per cent. The composite listing includes bonds of diversified character [15782] and quality. The Penn Water bonds are not included. No information is supplied as to which, if any, are comparable with the Penn Water Bonds.

Q. Are all the preferred stocks listed on pages 39 and 39-A as having been issued by electric operating utilities during the years 1935 to 1945 inclusive comparable as to quality with the outstanding Penn Water preferred stock. A. No. The yields at the prices at which these preferred stocks were offered to the public varies from 3.75 to 6.67 per cent. The Penn Water preferred stock is not included. Preferred stocks which are so unlike each other cannot all be comparable with the Penn Water preferred. As to which may be comparable, no information is supplied.

Q. Are all of the fourteen common stocks which are identified on page 38-A comparable with the Penn Water common stock? A. The question is answered by the fact that the highest of the earnings-price ratios is 84 per cent higher than the lowest and that for January, 1940, the highest of the earnings-price ratios was 73 per cent higher than the lowest among the 11 common stocks included at that time. Adjustment and interpretation of the earnings-price ratios are necessary to provide any fairly exact measure of the cost of equity capital but are not required to demonstrate the existence of wide differences in investment favor. Until the level [15783] of the risks associated with Penn Water has been indicated, by reference to appropriate data, an assumption that Penn Water corresponds to the average of such a group of other utilities is as arbitrary as an assumption that it corresponds to the best or worst.

Q. Would your last statement be true if the group of fourteen common stocks had been selected because comparable with Penn Water as to risk and uncertainty? A. It would not.

Q. Are the companies or securities which are identified on the various schedules of Exhibit 46 included as the result of methods or criteria of selection which involve comparability with Penn Water? A. No. The methods or criteria of selection did not involve any consideration of comparability with Penn Water.

Q. Dr. Foster, have you examined the statement by Mr. Joseph at the bottom of page 9949 that in preparing Exhibit 46 he "had in mind the Bluefield Water Works decision and particularly this quotation from it", referring to the excerpt which is copied at pages 9947 and 9948. A. I have.

Q. In this connection have you considered the statement by Mr. Joseph at page 10,102 of the transcript that:

> "Well, I have proceeded on the theory that the Commission is going to allow this utility a fair rate of return from what investors are getting on other similar investments. They are going to treat this utility fair. They are going to allow the utility to earn about as much as is being earned on [15784] similar investments generally"?

A. I have.

Q. Does Exhibit 46 represent an application of the principle, as expressed in the quoted paragraph from the Bluefield decision, that a public utility is entitled to earn a return equal to that generally being made at the same time on investments in other business undertakings attended by corresponding risks and uncertainties? A. No.

Q. Will you please explain that answer? A. Mr. Joseph said at the bottom of page 9974 that the word "investments" was used in the Bluefield decision to mean dollars being currently committed as investments. The word could not have had any other meaning in the context of the Bluefield decision. The Supreme Court stated that a public utility is entitled to earn a return on the value of its property and that it was erroneous for the Commission not

to accord proper weight "to the greatly enhanced costs of construction in 1920 over those prevailing about 1915 and before the war". Mr. Joseph has determined yields on bonds and preferred stock at their current market values. He has determined earnings-price ratios on the basis of current market values of common stocks. Thus, he has presented evidence of the cost of capital in a manner consistent with his interpretation of the meaning of the word "investments" in the quoted paragraph.

However, Mr. Joseph has assumed that the rate of return [15785] to be determined by the Commission will be applied to an entirely different kind of "investment", past investment, made many years ago in substantial part before the first World War, at a much lower level of general prices and construction costs. Therefore, a shift takes place in the definition and meaning of the word "investments". The rates of return being realized currently on other investments, expressed at present-day values, of corresponding risks and uncertainties, applied to a rate base representing original investment could give a result consistent with the Bluefield principle only by accident.

Q. Have you examined the statement by Mr. Joseph at the top of page 11,600, in answer to a question which appears near the bottom of page 11,598 and together read as follows:

> "Q. In your opinion are different public utilities entitled to higher or lower fair returns depending upon the periods of construction of their properties and the levels of construction costs during those periods?
>
> "A. Since in my opinion the fair rate of return would be the same without regard to the time of construction, the dollars of return would vary."

A. I have.

Q. Is there an economic basis for the conclusion that the dollars of return allowed by a regulatory commission as fair and reasonable should vary substantially with the

[15786] period of construction of the property and the level of constructions costs during that period? A. There is no rational basis for such a difference in treatment.

Q. Will you please explain the reason for your answer? A. The quoted paragraph from the Bluefield decision is consistent with the valid economic principle that a utility is entitled to a "return" equal to that being made at the time on other investments of corresponding risks. The Bluefield decision is not consistent with grossly unequal annual returns resulting from application of equal rates of return to unlike rate bases. Recognition of the economic undesirability of widely varying returns because rate bases are fixed to reflect different construction cost levels, frequently has taken the form of suggestions that, where original cost or prudent investment are to be used as a rate base, the desirable flexibility may be maintained by adjusting the rate of return.

Q. Have you examined the statement by Mr. Joseph at pages 11,584 and 11,585 of the transcript which reads as follows:

> "A. I have this in mind, Mr. Sparks: Utilities that have reasonable capitalizations would obtain substantially the same fair rate of return, other things being equal. * * *
>
> "Q. Are you saying, Mr. Joseph, that those utilities [15787] having reasonable capitalizations would have the same rate of return?
>
> "A. Would command approximately the same fair rate of return, yes, sir.
>
> "Q. When you use the word 'command' there, do you mean that they should be allowed the same fair rate of return?
>
> "A. Yes, sir."

A. I have.

Q. Are these statements consistent with the quoted paragraph in the Bluefield case to the effect that a utility

is entitled to a return equal to that being made at the time on other investments of corresponding risks? A. No.

Q. Will you explain your reasons for that answer? A. The statements at page 11,584 represent a shift from the idea of a return equal to those on other investments of corresponding risks to the idea of a return equal to the average on all other electric utility investments. The averages presented by Exhibit 46 are not averages which assume equality of choice by individuals among alternative investment opportunities. They are weighted averages, which assume that each individual investment is in proportion to the ratio of the capital of each enterprise to the aggregate capital of all the utilities in the class.

[15788] Q. Have you examined the statement by Mr. Joseph at page 11,585 of the transcript which reads as follows:

> "Q. I don't think that answers my question, Mr. Joseph. It was, what are the data which may be considered in a determination of the estimating of the cost of equity capital to Penn Water as a component of the fair rate of return.
>
> "A. The cost of equity capital to Penn Water is unnecessary in a determination of the fair rate of return for Penn Water. Furthermore, I am not at all sure it can be obtained."

A. I have.

Q. Is it correct to say that an estimate of the cost of equity capital to Penn Water is unnecessary in the determination of the fair rate of return for Penn Water? A. No.

Q. Have you examined the statement by Mr. Joseph at page 9963 of the transcript which reads as follows:

> "Q. Well, would you say then that the credit of an enterprise does depend upon the composite appraisal of investors as expressed in the market place?
>
> "No."

A. I have.

Q. Is that a correct statement? A. No.

[15789] Q. Why not? A. Mr. Joseph, himself, stated at the top of page 9958 that the cost of capital depends upon the investor's appraisal of the risks present in the investment. It is obvious that the cost of capital to an enterprise is directly dependent upon its credit. In this connection Mr. Joseph said at the top of page 11,592 that it is fair to say that the measures of the credit of an enterprise are the yield rates at which creditors buy bonds as well as the earnings-price ratios, if those earnings-price ratios express the prospective return basis upon which the stock is sold in the market.

Q. Have you examined the statement by Mr. Joseph at pages 10,324 and 10,325 as follows:

> "Should the carry-over on the bonds issued in 1928 affect the cost of capital in 1944? I say no, and I think that the fact that the carry-over may be either a debit or a credit dependent upon the style or fashion of financing in 1928 is a complete answer for my question. The utility during the period from 1928 to 1944 was charging rates sufficient to recover the costs of its capital, and that without regard to whether the bonds had been issued at a discount or a premium."

A. I have.

Q. Is that a correct statement? [15790] A. No.

Q. Why not? A. It must be assumed that the utility was charging rates sufficient to recover the costs of its capital on the basis of an assumption that the capital contracts would remain undisturbed until maturity. To disallow the unamortized costs in rate of return determination is to penalize investors for inability of management to forecast trends of capital costs. It would be an application in rate regulation of a rule of hindsight rather than of foresight.

It is obvious that a discount or a premium may be experienced depending upon the selection of coupon rate which seemed most desirable at time of financing. The ex-

perience may reflect "style or fashion of financing in 1928". It does not follow that it reflects imprudent managerial decisions. Premiums payable upon redemption of outstanding bonds are an unavoidable cost of the opportunity to obtain debt or preferred stock capital at the currently low rates. Retroactive application of revised regulatory standards, which deprive utilities of the opportunity to recover unavoidable costs, or penalize investors for managerial decisions which were rational and prudent when made, increases the hazard associated with utility investments and tends to increase the returns demanded by equity investors.

• • •

[15802] CROSS-EXAMINATION.

By MR. GOLDBERG:

• • •

[15819] Q. In stating the first alternative in your prepared testimony you say it is to "adjust the earnings-price ratios in order to recognize some of the obvious circumstances considered by investors in arriving at their appraisals, and, in addition, to recognize the existing significance of circumstances for which quantitative adjustments are not feasible."

Now then, you speak of recognizing only some of the obvious circumstances. Will you tell us why in the first alternative mentioned by you recognition is to be given only to some of the obvious circumstances and others are not to be recognized? [15820] A. I believe that recognition and consideration should be given to all the obvious circumstances influencing investor-appraisals and having a bearing on the extent to which the arithmetical relationship between reported earnings and market price may be misleading as an indication of capitalization rates. The point is that in the process of giving such recognition and consideration to those circumstances some are susceptible of quantitative recognition and some are not.

I may observe further that the testimony to which you have referred relates particularly to page 38-A of Exhibit 46; that the observations there made as to procedures which would have given significance to the data are particularly in recognition of that page of exhibit independently of page 38, the preceding page.

* * *

[15887] Q. You have at transcript 15,759 stated that undue respect for form, as distinguished from fact and substance, has resulted in inconsistent treatment of similar items in the preparation of the data presented by pages 38 and 38-A.

I was interested in securing from you all of these examples of inconsistent treatment of similar items. I understand that you have not made a study which enables you to tabulate all of them, but you say you are aware of a certain number of them.

I was interested in getting from you the inconsistent treatment of similar items of which you are aware. A. That particular category, of course, refers only to non-recurring items which were of the character which might have been adjusted for in the income statement which was published.

Q. May I interpose at that point?

In your last answer I take it that the reference in lines 2 to 5 at transcript 15,759 is to the category referred to by you as non-recurring items of a character which might have been adjusted for in the income statement which was published. Is that right? A. Yes.

Q. Idaho Power Company was an illustration of one of that character? A. Idaho Power Company was an illustration. The practice [15888] of adjusting for significant non-recurring tax savings is, of course, a relatively recent development. Its development was coincidental with the war-time increase in income tax rates, and as the result during the latter part of the period reflected on page 38 the

adjustments were generally already made in the published income statements, and during that latter part of the period Idaho Power is, I believe, the only instance of that particular kind of non-recurring item for which adjustment had not already been made in income statement.

I believe during the earlier years there will be found instances where it was not made in published income statements.

Q. You say that of recent years adjustments are already reflected in the published statements. Does that begin with 1943, or what year? A. I am sure it was not a change of form which had any abrupt beginning. I will place it generally at an earlier date closer to 1941, 1941 and 1942.

Q. Now, then, can you give us these other instances of which you are aware where there has been the inconsistent treatment of similar items in the preparation of pages 38 and 38-A of the category which you have indicated your statement had reference to? A. Limited to that particular category, adjustment for federal income tax savings, I have in mind no illustration, I think it is correct to say there were such federal income [15889] tax savings in connection with refinancing of debt or other transactions which gave rise to unusual deduction from net taxable income, and if analysis were made, such illustrations could be found for the year 1940, perhaps for latter years, and certainly for earlier years.

Q. You have not made that analysis? A. I have not.

Q. Considering your illustration as respects Idaho Power Company, is it your suggestion that the 50 cents per share, or a total of approximately $225,000, should have been deducted from the reported net income available for common before determining the earnings-price ratio?

You will find that also on transcript 15,759, Dr. Foster.

A. May I have the question, please?

(Question read.)

The Witness: I believe that if the amount to which you refer is deducted, the resulting net income is a better statement of earnings available to the equity or per share under the conditions existing during the year 1945.

By Mr. Goldberg:

Q. My question is, is it your statement that that should have been done, that the deduction should have been made before determining the earnings-price ratio? A. Well, I have testified that my position is that the earnings should be so stated as to provide the best possible [15890] expression of earnings under the conditions existing during the period, or that in lieu of such arithmetic treatment, consideration should be called to the facts and their significance indicated.

Q. Either one of those, in your opinion, should be done in determining the earnings-price ratio? A. Either the one or the other as a general proposition and, of course, the reference to Idaho Power Company, the 50 cents per share, is intended as a mere illustration.

Q. Using Idaho Power Company for the sake of the question, you are saying one or the other should be done in determining the earnings-price ratio, either a deduction or calling attention to the fact. A. Either deduction and calling attention to the related circumstances, or calling attention to the particular fact among other circumstances which influenced the prospect of income.

Q. With respect to Idaho Power Company, what other circumstances do you have in mind? A. We have already reviewed a substantial number of other circumstances which were common to Idaho Power Company as well as to others of the 14.

Q. You mean the effects of the tax laws and increasing demand for service, electric service wage trends, things of that nature that we have earlier discussed. Is that it? [15891] A. That is right, although you were the one who included the atomic power.

Q. Yes.

TRIAL EXAMINER: Did you make a check calculation using earnings and prices to obtain a comparative earnings-price ratio for these 14 companies appearing on page 38-A?

THE WITNESS: As of that date, and taking into account the circumstances which we are discussing?

TRIAL EXAMINER: Yes.

THE WITNESS: No, I have not. I did do so for the smaller group of six in connection with my direct testimony.

I should amend that statement. I did so for earlier years since at the time of the direct testimony the annual reports and other information were not yet available for the year 1945.

TRIAL EXAMINER: Have you done anything on those six companies since you last appeared on the stand in connection with your rate-of-return testimony?

THE WITNESS: I have in other connections, Mr. Examiner. I have not been asked to bring the exhibit up to date and it would, in fact, contribute little or nothing to the conclusions to bring it up to date.

TRIAL EXAMINER: But in those calculations you would have a direct comparison for the corresponding earnings-price ratios that are on page 38-A for those six companies.

[15892] THE WITNESS: I would have a direct comparison with the corresponding earnings-price ratios which are on the working papers and which are reflected in the form of averages on page 38.

By MR. GOLDBERG:

Q. Dr. Foster, we have just talked about one adjustment specifically in dollars and cents; that is, the 50 cents per share adjustment. What other adjustments should be made to the reported earnings, reported net income avail-

able for common of Idaho Power Company before determining the earnings-price ratios?

In asking that question I am not merely interested in the general nature of the adjustment but I am interested in the cents or dollars of adjustment. A. I may say this, Mr. Goldberg: The awareness of the nature of adjustment, or the consequence of failure to recognize trends and existing circumstances, does not depend upon having made a precise calculation of dollar amounts, and, further, that I have not assumed the burden of making such calculations for the 14 companies represented on pages 38 and 38-A of Mr. Joseph's exhibit.

* * *

[15893] Q. Would the consideration of all the necessary adjustments materially affect the net income available for common in connection with the determination of the earnings-price ratios other than the 50 cents per share we have already discussed? A. Consideration of all of the circumstances would indicate a material difference between reported equity income and equity income prospectively available at the time for which these prices are taken.

Q. What adjustment do we make in addition to the 50 cents per share for consideration of all these other necessary adjustments? A. If you are asking me for indication of the kind and character of such adjustments, I am unable to respond.

Q. No, I am talking about the dollars and cents of the adjustments. A. I have answered that question.

Q. You mean you cannot tell us? A. I can tell you, for instance, that the excess profits tax liability of the Idaho Power Company was $665,000 for the year 1944; it was $260,000 for the year 1945, and would have been substantially more in the absence of non-recurring credits; that the federal income tax for the year 1945 is [15894] $645,000, and that the prospective effect of the rates established by the 1945 Revenue Act was a significant and substantial reduction of those federal tax liabilities and a

corresponding increase, everything else being equal, in equity income.

Q. Taking all of that into account, which you say the investor takes into account, can you tell us what dollars and cents adjustment we are to make in the net income available for common before using it to determine the earnings-price ratio? A. I have had no occasion to prepare precise dollars and cents estimate.

Q. Can you approximate it? A. Not without expenditure of time.

Q. Does the investor make a quantitative adjustment for all these matters you have discussed? A. A careful, refined investment analysis certainly would have done so.

Trial Examiner: What do you mean by "refined"; anything more than careful?

The Witness: Perhaps not, Mr. Examiner. I was using the word "careful" in the sense of care and accuracy, and the word "refined" in the sense of consideration of all or substantially all, of the pertinent considerations.

By Mr. Goldberg:

[15895] Q. Isn't it a fact that after an investor had done all that he might still end up with no more of an adjustment than 50 cents per share because of the offsetting nature of some of the adjustments you consider? A. Certainly. The investor making his adjustments and recognizing the trends and the circumstances may find them to be offsetting. It is equally true that at other times they are not offsetting but have their influence in the same direction. Therefore, it follows that if, as a matter of accident, they are offsetting, the earnings-price ratios computed as they are computed for the purpose of Exhibit 46 tend to be representative and usable.

If, as a matter of accident, they are not offsetting, then they may be wide off the mark.

[15896] Q. Do non-recurring items occur nearly every year? A. During the recent years, particularly since the high income tax rates have motivated readjustments, corporate and otherwise, non-recurring items have tended to be present continually. That is far from true in the same degree 15 or 20 years ago.

Q. Would you say that with respect to the immediate future they will tend to appear nearly every year? A. I would say that the motivation to sell surplus property, to obtain benefits from write-off of debt discount and expense, etc., will not be as strong as it has been for the past half-dozen years.

Q. Does that mean that in the immediate future you think non-recurring items won't tend to appear every year? A. I have no basis for conclusion as to that. I assume you are referring to any particular company.

Q. When the investor considers these non-recurring items and makes allowance for them, does the allowance he makes reflect in the price he pays for the stock? A. I am trying to understand the question. I may put it this way: If in the case of a given enterprise there is experience during a year of a non-recurring tax saving, so-called, which increased earnings per share by 50 per cent of what they otherwise would have been, investors would tend to disregard the additional 50 per cent of earnings in appraising [15897] the future.

Q. And pay a price accordingly? A. And pay a price accordingly, yes.

Q. Now, then, if the actual income as reported of the Idaho Power Company had been adjusted by this 50 cents per share, it is a fact, is it not, that the earnings per share would have been reduced from $2.92 to $2.42 per share? A. That would be the effect on earnings of that particular adjustment.

Q. And the earnings per share to December 31, 1946, of Idaho Power Company were $2.74 per share. Isn't that so?

Mr. Sparks: May I have the question, please?

Trial Examiner: Yes.

Mr. Goldberg: I might be able to help you by showing you photostatic copies of pages 1592 and 1593 of the February 8, 1947, supplement to Moody's Public Utilities.

(Question read.)

The Witness: $2.74 is the earnings per share as reported by Moody's Public Utilities for the 12 months ended December 31, 1946.

By Mr. Goldberg:

Q. That is mathematically a difference of 32 cents between the $2.74 and the $2.42, is that right? The $2.42 is the earnings per share after adjustment of the 50 cents per share? [15898] A. A difference of 32 cents.

Q. The difference between the earnings as reported to December 31, 1945, which Mr. Joseph used and the actual 1946 earnings which we have just referred to of $2.74 is only 18 cents per share, namely, the difference between $2.92 and $2.74. Isn't that so? A. I am lost with these figures. May I have it read?

(Question read.)

The Witness: That is right.

By Mr. Goldberg:

Q. You have at transcript 15760 and 15762 criticized Mr. Joseph's opinion with respect to the conversion of the convertible debentures of the Commonwealth Edison Company and their relationship to the earnings-price ratios which were used by Mr. Joseph. Have you determined what effect on earnings available for common was brought about by that conversion? A. I have made the analysis for Commonwealth Edison Company for the year 1945. I do not have that analysis here and I do not recall that in that connection I made a separate determination of what

the result would have been with reference to the effect of the treatment of the convertible debentures.

Q. Does that mean that you can not tell us what the effect would be on the 5.35 per cent shown on page 38-A of [15899] Exhibit 46 for Commonwealth Edison Company? A. The effect would be the arithmetic result of increasing equity income by the requirements of the debentures and dividing that amount of income by a number of common shares increased to correspond to the number which would be outstanding after the conversion. I have not made the arithmetic computation.

Q. You would have to take into account in that computation, wouldn't you, the Federal income tax effect? A. That is correct.

Q. We have, we think, made the correct computation, and according to our computation the 5.35 per cent becomes 5.14 per cent. I would appreciate your checking that and to facilitate that check we will be glad to supply you with the method we used in arriving at that result. A. I will be glad to accept it. It appears within the range of what I would expect it to be.

Q. Yes. And of course changing the 5.35 per cent to 5.14 per cent wouldn't have any effect on the 4.99 which is the average at the bottom of the last column on page 38-A. Isn't that so? A. It would have very insignificant effect. I may comment that I believe the choice of methods should not be controlled by the direction of effect of alternative methods nor by the quantitative [15900] effect in a given situation if in other situations the quantitative effect might be substantial.

Q. You seem to have anticipated a question I had much later on, but I think I will wait until we get to that.

You have testified at page 15765 that the significance of the earnings-offerings-price ratio, at the bottom of the page, presented on page 40 of Exhibit 46 is impaired by errors committed in their determination. Isn't that right? A. That is right.

Q. To what errors do you have reference, Dr. Foster? A. I believe I have illustrated the errors by particular reference to the determination for the offering of common stock by Sioux City Gas and Electric Company and the offering of common stock by Central Vermont Public Service Corporation.

Q. I am interested in getting all these other errors on page 40. Are you in a position to tell us what they are? A. Again I have not felt myself under the burden of making determinations in each and every instance. I have made such an analysis of each of the issues represented on page 40 for my own purposes rather than for the purpose of identifying or measuring the effect of errors which in my opinion Mr. Joseph may have made.

Q. Does that mean that you can not name or specify all the errors committed in the preparation of page 40 of [15901] Exhibit 46 which impair the usefulness of that page other than the illustrations for Sioux City Gas and Central Vermont Public Service? A. Impairment is a matter of degree.

Q. Just as you have used it, Dr. Foster? A. The two issues to which you refer were the instances in which I found the most significant errors. In other instances I would not and did not reach results precisely corresponding to those reached by Mr. Joseph. It perhaps should not be expected that two analyses would do so. There are other instances where the variation is significant; there are still others where it is not. I would have to make a comparison issue by issue in order to tell you what the differences are. I would have to go further and study them in order to determine what his errors are, if there are errors in all instances.

In other words, without description by Mr. Joseph as to how he reached the statement of earnings-offering-price ratios in each instance reconstruction of his methods at times becomes guesswork?

Q. Do I understand that when you stated the significance of the earnings-offering-price ratios presented on page 40 is impaired by errors committed in their determination, you had not made the analysis that you have just stated you would have to make? [15902] A. I have made an analysis for the greater part of the instances which was an attempt, on the basis of the information available, to determine what his method was.

Q. Does that mean that you have made the necessary detailed study to enable you to say that there are other errors on page 40, other than those committed with respect to Central Vermont and Sioux City, and that these other errors impair that presentation on page 40, significance of the presentation on page 40? A. I believe there are other errors and that they do tend to impair the presentation although they are not errors of the somewhat gross character represented in these two instances.

Q. What are these other errors you have determined were made in the presentation of the material on page 40? A. I will have to review notes for a minute to answer that question.

* * *

Mr. Goldberg: Mr. Examiner, before we proceed I wonder if we could have the reporter check several matters in the record so that we may have them before the witness Watchorn [15903] returns?

Trial Examiner: Yes.

Mr. Goldberg: It appears to me that the answer is missing at the bottom of transcript 15552. The page ends with line 25, but I feel the answer was made and would have appeared as line 26. I would like to have the record checked on that, and what the answer is if there is an answer.

Trial Examiner: Very well.

Mr. Goldberg: There are two other places. Unfortunately, I didn't review the record until the record

got cold. I can't figure out what the word should be. Transcript 15583, line 12, my recollection, without having the record before me right now, is that the words I have doubt about are "finance. Judge." Then it stops there. I don't think the word "finance" is right. It doesn't seem to have any meaning.

Then at transcript 15584, line 19, in the question I asked, the word "finance" again appears. It doesn't seem to make sense in the question, I can't think of what the word was, and I was probably using the word the witness suggested earlier.

If we could have those matters checked and have them before the witness Watchorn returns I think it would be helpful.

TRIAL EXAMINER: Can you make a spot check, Mr. Reporter, during the luncheon hour or during the evening?

By MR. GOLDBERG:

[15904] Q. Dr. Foster, will you now name these other errors which impaired the significance of the earnings-offering-price ratio presented on page 40? A. First a general reference to the inclusion or exclusion of offerings and the statement of number of shares offered. There are a substantial number of offerings which are not included on page 40 where the circumstance of offering is the same as the circumstance existing in the case of offerings which are included. The statement of number of shares offered is in my opinion erroneous in that it does not reflect the full number of shares exposed to appraisal in instances of exchange offers which were underwritten.

With more particular reference to the earnings-offering-price ratios as shown by page 40, I will refer to the offerings beginning with the most recent in point of time other than the Sioux City Gas and Electric Company offering in December, 1945. The immediately preceding issue was that by Montana-Dakota Utilities Company in October

of 1945. The earnings per share available to support that issue are shown by page 40 as 72 cents per share. The 72 cents represents, I believe, reported earnings per share available from a public source, probably Moody's Public Utilities. The offering prospectus dated October 26, 1945, includes a pro forma income statement for the year 1944, which shows gross income before income taxes of $2,847,332. The statement of earnings per share, [15905] on the basis of the Federal income and excess profits taxes, actually payable for the year 1945, determined by reference to the pro forma statement of income, is approximately 86 cents per share on the 900,000 shares to be outstanding.

In that connection it may be noted that the net proceeds were indirectly applied by the company toward payment of the purchase price of the outstanding securities of Dakota Public Service Company.

Q. Before you go on, Dr. Foster, the 72 cents per share shown on page 40 is related to offering of 233,351 and 4/10 shares. Your 86 cents is related to some 900,000 shares. A. The earnings available per share on the shares being offered are necessarily the earnings per share on the total number of shares to be outstanding, including the shares already outstanding and the shares being offered.

Q. And your 86 cents is on all the shares which would be outstanding, including the offering? A. That is correct.

Q. Is that right? A. Yes.

Q. And is it your statement that the 72 cents merely is related to the number of shares offered column? A. No, I did not so state.

Q. All right. A. I said that the 72 cents is, I believe, available [15906] from reported earnings per share.

Q. I understand now. I had misunderstood. A. I do desire at this time in this connection to say that I do not have with me the notes which I made reflecting my investigation of the earnings per share as stated on page 40. The offering prospectus also disclosed the amounts of the Fed-

eral tax liabilities, and it should be noted that as of the date of this offering the proposed revenue act was before Congress and it was signed on the 8th of the following month.

If adjustment is made for the effect of that legislation, assuming all other circumstances to be unchanged, the earnings per share become $1.32. It may, I believe, be reasonably concluded that the investor appraisals of that offering were on the basis of prospective earnings in excess of 86 cents per share but less than $1.32 per share.

Q. Why do you say that? A. Pardon?

Q. Why do you say that? A. Because in general, analyses were discounting the savings prospectively to be released by the elimination of the excess profits tax.

Q. Was their appraisal closer to the 86 cents or closer to the $1? A. I made, Mr. Goldberg, approximately a year ago, an [15907] analysis which consisted of a correlation, or a multiple regression analysis, of the relationship between earnings-price ratios and proportionate gross income available to the equity and the dividend pay-out ratio. The closest relationship existed on the basis of an assumption of 60 per cent of the released tax savings becoming available. The character of that statistical analysis provided a fairly satisfactory indication of the appraisals of that particular factor.

Q. Then I take it you would say that the investor's appraisal was based on about 94 cents per share? A. I have not applied the 60 per cent here, but it is approximately 86 cents plus 60 per cent of the difference between 86 cents and $1.32.

Q. I was saying the difference between 86 cents and $1. It would be higher than 94 cents, then. Then $1.13 in round figures? A. Yes, recognizing that this method of splitting earnings per share does not give precisely correct results because it is not the same as applying the 60 per cent to the difference in total equity income.

Q. If I understand what you have just told us with respect to Montana-Dakota Utilities Company, you say the representation on page 40 erred in using 72 cents as the earnings per share instead of the 86 cents or the $1.32. Is that right? [15908] A. I believe that it erred, first, in not considering the information available from the prospectus, and, secondly, in not giving consideration to the consequence of tax revision which, as it happened at that time, was currently the significant factor.

Q. And the consequence of the tax adjustment, of course, is only one of the many adjustments you say the investor would be considering in making. Is that right? A. The investors are concerned with the several trends and circumstances which affect the prospective income. I would say merely that the revision of the war tax legislation being currently under consideration, it was important in the minds of investors.

Q. Does that complete your statement with respect to Montana-Dakota Utilities Company or are you going to give us what you consider is the correct earnings-offering-price ratio in lieu of that 6.26 per cent? A. On the basis of what I have already said it is readily possible to compute an earnings-offering-price ratio.

[15909] Q. Have you computed it? A. I have not.

Q. Does that complete your statement with respect to the errors in the representation shown for the Montana-Dakota Utilities Company; and if so, I would appreciate your going on to the others? A. The next offering listed on page 40 is the offering of 142,957 shares by Florida Power Corporation in October of 1945. In that case a total of 539,240 shares were being sold, of which 396,383 were being sold by General Gas & Electric Corporation and 142,857 shares by Florida Power Corporation.

Then to complete the statement of the circumstances, 76,793 shares were reserved against subscription by certain stockholders, 21,553 shares were in fact subscribed and the balance purchased by the underwriters.

With reference to the $1.02 of earnings shown per share, my recollection is that the prospectus was consulted by Mr. Joseph and that the $1.02 reflects that examination. The recollection is only of my earlier review and Mr. Joseph's testimony.

Q. I am not so much interested in what Mr. Joseph looked at as I am interested in finding out if you agree or disagree with the $1.02, and if you disagree what you think the showing should be. In other words, you talked about number of shares offered. You feel the number of shares [15910] offered in that column on page 40 is not the proper showing?

Then I would like to have your statement as to what is the proper showing without the necessity of the analysis of it. A. You want only a direct statement of what I think the proper showing would be?

Q. That is right. A. Here, again, I believe that consideration should be given to the prospective effect of the revised tax laws, but in this instance that effect is of relatively less importance than in the case of other issues to which attention has been called. I do not believe that my examination of the offering prospectus would have indicated earnings per share significantly different from the $1.02. There is an item of amortization which has a 6-year term which might have been given some consideration.

My analysis sheet prepared at the time of the issue shows $1.07.

If you desire that I go now into the next offering, Central Arizona Light & Power Company——

Q. I desire that you go to it if there have been errors made which you feel impair the significance of the showing on page 40. A. Since I have concluded in the case of Florida Power Company that such errors as may have been made do not significantly impair the meaning of the earnings-price [15911] ratios, I might have omitted that one.

Q. I see. A. In the case of Central Arizona Power & Light Corporation, I believe that the error consists pri-

marily in the failure to recognize the effect of the excess profits tax liability which was for that company substantial.

Q. In other words, in showing 85 cents as earnings per share, you feel an adjustment should have been made for the federal tax liability. Is that right? A. I do not believe that in view of the information generally available to the purchasers of that common stock and the information presented in the prospectus that the acquisition was in fact on the basis of the prospective earnings per share of 85 cents.

Q. Have you made the adjustment that you think the investors made for taxes? A. I will give it to you in the same form as in the case of Montana-Dakota Utilities Company.

On the basis of 1945 income tax rates I haxe stated the earnings per share as 78 cents, and on the basis of the 1946 income tax rates at $1.29 cents. I should repeat, perhaps, that I am referring to an analysis sheet prepared at the time of issue.

Q. What is the significance of telling us you are referring to an analysis sheet prepared at the time of the [15912] issue? A. Perhaps nothing other than to tell you that we undertake as each issue comes out to obtain the prospectus and at that time to prepare an analysis sheet which we use subsequently.

Trial Examiner: May I have the answer read, please?

(Answer read.)

The Witness: The next common stock is an offering of the Pacific Gas and Electric Company in September of 1945. That was a special offering of a listed stock, the sale being of the North American Company interest.

The analysis shows, again, that the tax feature was of dominant importance. The earnings per share which I have on the basis of the tax rates effective in the year 1945 are $2.13, or the same as on page 40.

The adjustment for the 1946 tax basis shows $4.07.

I will go to Central Hudson Gas & Electric Corporation offering. In September of 1945, I have no significant criticism of the 56 cents per share shown by page 40 as representing actual earnings during the 12 months ended March 31, 1945 on the basis of the tax rates then effective. I would, however, call attention to the required reservation of net income in the amount of $120,000 per year until the year 1971, a requirement by order of the New York Public Service Commission. Although deducted prior to the statement of earnings available [15913] to the equity, the $120,000 is not in fact non-available to the equity.

The recognition of the effect of the 1946 tax rates would restate the 56 cents per share as 76 cents per share.

The next offering is that of the Lake Superior District Power Company common stock in May of 1945. As of that date for the purpose of the statement of the earnings-offering-price ratios, I did not attempt a quantitative statement of the effect of income tax law revision, although then in prospect.

The analysis of earnings on the basis of information supplied in the prospectus includes two relatively minor adjustments which tended to reduce gross income and which resulted in $1.64 per share instead of the $1.68. That, of course, is an adjustment in a direction contrary to the more important consideration of tax revision.

The Central Illinois Electric & Gas Company offering appearing on the immediately preceding line in February of 1944 was sold to the underwriters by Consolidated Electric & Gas Company.

My analysis shows earnings per share of $1.92 as compared with the $2.33, and I believe it is correct to say that the use of the offerings prospectus is the explanation of the difference. The earnings-offering-price ratio becomes 10.04 instead of 12.2.

Mr. Sparks: Had you finished Central Illinois Gas Company?

[15914] The Witness: Yes.

Mr. Sparks: I wonder if you might not want to recess at this point before Dr. Foster begins on another company.

Trial Examiner: I think we have just time to take up another company.

The Witness: The next is Derby Gas & Electric Company, an offering by prospectus dated August 29, 1944.

Mr. Goldberg: August of 1944? We have January.

Mr. Sparks: It shows on page 40 as January.

The Witness: That is what is bothering me, then. There is another by Derby Gas & Electric Company in the same year, which is not shown on page 40. I continually confused them.

Mr. Goldberg: I see.

The Witness: I have confused the two and I do not have here a record with respect to the offering in January of 1944.

By Mr. Goldberg:

Q. What was the earnings-offering-price ratio on the one you don't have, which is not shown on page 40? A. I have on a tabular sheet data with respect to each of the two offerings by that company in 1944. In the case of January, the offering in January of 1944, I determined earnings per share of $2.56, and in the case of the offer in August, 1944, earnings per share of $2.14 based in each case on the information contained in the prospectus.

Q. With respect to August of 1944 offering, I wonder [15915] if we could have the data which you used to derive the earnings-offering-price ratio for that issue? A. Yes. In August, 1944, Derby Gas & Electric Company issued 54,054 shares of common stock and used the proceeds, together with other cash, to acquire certain securities of Dan-

bury & Bethel Gas & Electric Light Company directly and from Cities Service Power & Light Company. The price to the public was $20; the price to the underwriters was $18.50, and the proceeds to the company, net of company expenses, was $18.024.

Q. Per share? A. Yes. There was no competitive bidding. The equity earnings have been stated at $430,314 for the 12 months ended April 30, 1944 on the basis of the analysis of the offering prospectus.

* * *

[15916] Q. Dr. Foster, I think you had finished Derby Gas & Electric Corporation. I think you have already given us Central Vermont. So that takes us to Southwestern Public Service, September, 1942 issue. A. Yes, intermediate between the Southwestern Public Service issue in September, 1942, and the Central Vermont issue in December, 1943, I would have included three issues involved in portfolio divestments by holding companies which are omitted.

Q. Which ones are those? A. Sales of Houston Lighting & Power common stock in May of 1943 at an earnings-offering-price ratio of about 9.4 per cent; sale of the Idaho Power Company common stock in September of 1943 on a basis of about 8.5 per cent, and a sale of the Public Service of Colorado common stock in November of 1943 at approximately 11.8 per cent.

The Southwestern Public Service offering in September of 1942 was to the common stockholders of Community Power & [15917] Light Company and General Public Utilities in connection with a reorganization. The total number of shares was 185,000, of which 44,519 were taken by the common stockholders and the balance of 140,481 shares was offered to the public. The offering was jointly with an offer of bonds and preferred stock.

Page 40 does not in this instance provide a statement of earnings per share or of the earnings-offering-price ratio. Such a statement might have been set up by reference to

the pro forma income statement contained in the offering prospectus. It would not, however, have had much meaning for the purpose of page 40; that is, earnings per share indicated by the offerings prospectus were about $1.90 a share which, of course, in relation to the offering price of $5.00 per share indicates an uncertain and unsettled situation which is not comparable with the other issues tabulated.

The next common stock on page 40 is the offering by San Diego Gas & Electric Company in November of 1941 of 246,750 shares for new capital. My analysis of the prospectus dated July 8, 1941, and considering additional prospective taxes and the net effect of a rate reduction indicates earnings per share of $1.18 as compared with $1.25 as shown on page 40.

On that basis the earnings-offering-price ratio would be 9.07 rather than 9.62 per cent.

The next item on the list is the offering by Black Hills Power & Light Company in October of 1941 of 100,000 shares, [15918] of which 92,650 shares had been issued to General Public Utilities, Inc. as part consideration for the Dakota profits of General Public Utilities. Analysis of the offering prospectus dated October 28, 1941 giving consideration to an expected tax increase indicates earnings of $2.53 per share and an earnings-offering-price ratio of 15.3 per cent. Here, again, there is being established something of a new situation without a record of experienced earnings and the earnings-offering-price ratio is out of line with more mature situations.

Page 40 does not show earnings per share but states that information is not available.

Q. It is very much like that Southwestern Public Service, is it? A. It is generally the same kind of situation. The fact is that information is available but the facts are such as to make the information not particularly useful or significant in connection with the purposes of page 40.

Q. Did you give us the earnings-offering-price ratio for that Southwestern situation? I don't think you did. You

said earnings per share were $1.90. A. In relation to an offering price of $5.00, earnings-offering-price ratio would be 38 per cent.

Q. Yes. A. Obviously, not significant.

Q. All right. [15919] A. The next offering is that of the Louisville Gas & Electric Company in October of 1941 which was not underwritten. This was an offering by the company to the public and any security dealer or broker at a discount of 75 cents from the price to the public. 25,690 shares out of 150,000 offered were purchased and the balance was taken up by the holding company.

There was, of course, no offering prospectus. The analysis which I have of the earnings for the year 1940, which is for a date other than that shown by page 40, indicates $1.25 as compared with $1.49. There is, of course, no comparison between the two analyses.

The next item is an offering of 28,336 shares of United Illuminating Company common stock which was sold to the underwriters by United Gas Improvement Company in September, 1941. My analysis of the earnings per share and earnings-offering-price ratio in this instance gives results which coincide with those shown on page 40.

325,000 shares of Missouri Utilities Company common stock, offered in September, 1941, were sold to the underwriters by Community Power & Light Company jointly with an offering of bonds and preferred stock by Missouri Utilities Company. In this instance also my analysis of the earnings per share and the earnings-offering-price ratio gives the results which coincide with those presented by page 40.

[15920] The next issue is a sale to the underwriters of San Diego Gas & Electric common stock by Standard Gas & Electric Company in July, 1941. The analysis of the offering prospectus indicated earnings per share of $1.07 and an earnings-offering-price ratio of 7.4 per cent as compared with the 11.3 per cent shown by page 40.

I have next an offering by Connecticut Light & Power Company in April of 1941 which is not listed on page 40.

Q. What was the basis for that offering, the earnings-offering price? A. The source of the information is the offering prospectus.

Q. I was wondering what earnings-offering-price ratio you had. A. 7.3 per cent.

Q. All right. A. I do have the offering of Michigan Public Service Company common stock by the trustee for Inland Power & Light Corporation in October, 1940 jointly with an offering of bonds and preferred stock by Michigan Public Service Company.

The analysis of the offering prospectus indicated for the Michigan Public Service Company common stock, prospective earnings of $1.88 per share, or an earnings-offering-price ratio of 13.2 per cent.

The next is the West Penn offering by the company of [15921] 160,000 shares in April of 1940 for the purpose of providing proceeds to be expended for construction purposes. The offer was jointly with an issue of 3½ million of bonds.

The statement of equity earnings per share indicates $1.70 and an earnings-offering-price ratio of 6.29.

In the case of Indianapolis Power & Light Company, the total number of shares offered was 714,835 shares, of which 68,850 represented new financing, and the balance for sale to holding company interests.

I believe the earnings per share and the earnings-offering-price ratio is appropriately stated with reference to the total number of shares being offered. So stated, I have $1.76 per share and earnings-offering-price ratio of 7.33.

In the case of the Newport Electric Company, which was a sale to the underwriters by Utilities Power & Light Corporation, jointly with the sale of bonds by the Newport Electric Company, the earnings per share were $2.53 and earnings-offering-price ratio was 8.56 per cent.

I find that I have excluded Boston-Edison, the offering of December, 1935, from this tabulation. I have no information concerning it.

Trial Examiner: $3.53 instead of the $2.85?

Mr. Goldberg: $2.53.

The Witness: Which was that, Mr. Examiner?

Trial Examiner: Newport.

[15922] The Witness: Newport, earnings per share were $2.53 and the earnings-offering-price ratio 8.56 per cent.

By Mr. Goldberg:

Q. You gave us the earnings-offering-price ratios as determined by you, about half of them, and on the other half you did not. I think maybe we had better complete the record and get them all in.

For Central Vermont Public Service Company the earnings, I think the record shows, are $1.53 per share as determined by you. That would mean an earnings-offering-price ratio of 9.5. Is that right? A. May that be read?

(Question read.)

The Witness: That is right. I have 9.56.

By Mr. Goldberg:

Q. And the earnings-offering-price ratio for Derby Gas & Electric, January, 1944 offering, works out to 14.2. Is that right? A. That is right.

Q. You gave us Central Illinois but not Lake Superior Power ratio, I have worked it out to 7.29.

Trial Examiner: Which is that?

Mr. Goldberg: Lake Superior.

The Witness: I have the same percentage.

Trial Examiner: What is that?

[15923] Mr. Goldberg: 7.29.

Trial Examiner: You used the 2.36 for Derby?

Mr. Goldberg: You mean earnings per share?

Trial Examiner: Yes.

Mr. Goldberg: 2.56 as determined by Dr. Foster. 2.36 and 13.1 are related.

Trial Examiner: Yes.

By Mr. Goldberg:

Q. With respect to the Central Hudson Gas, Electric Corporation, what earnings-offering-price ratio was it that you had, Dr. Foster, based upon your 60 per cent relationship you talked about in connection with your income tax adjustment? I have worked it out to 6.94. A. Correct.

Q. And for Pacific Gas & Electric, using the same derivation, it worked out to 8.23. A. I check that percentage, also.

Q. Central Arizona Light & Power Company came to 8.27 earnings-offering-price ratio. A. Yes.

Trial Examiner: How did you use that?

Mr. Goldberg: We had earnings of 78 cents and $1.29 to work with. Take 60 per cent of the difference between those two and you come out to about $1.09.

Trial Examiner: I see.

[15924] The Witness: Correct.

By Mr. Goldberg:

Q. Florida Power Corporation came out to 6.59 earnings-offering-price ratio. Is that right? A. Yes.

Trial Examiner: Did you do the same thing there?

Mr. Goldberg: Yes.

The Witness: Yes.

Trial Examiner: 60 per cent, I mean.

Mr. Goldberg: Well, there I had only a $1.00 figure, $1.07, from Dr. Foster.

THE WITNESS: May that be restated? Did you say $6.59?

By MR. GOLDBERG:

Q. 6.59, yes. A. I got 6.59 in relation to $1.13 as the earnings per share.

Q. You said $1.07. I have that down there.

What is it with respect to $1.07? A. I have 6.31, $1.07 being the unadjusted earnings for the year ended July 31, 1945.

Q. $1.13 is an unadjusted figure or is it a different period of time? A. I believe the $1.13 represents the 60 per cent adjustment.

Q. I see.

[15925] Montana-Dakota Utilities Company, the earnings-offering-price ratio works out to 9.86. Is that right? A. Correct.

TRIAL EXAMINER: What did you use there for the per-share earnings?

MR. GOLDBERG: The 60 per cent of the difference between 86 and $1.32 added to 86, I think, gives you about $1.13.

THE WITNESS: That is right.

TRIAL EXAMINER: The same figure you used above, then, the one next to the above?

MR. GOLDBERG: They happen to be the same.

THE WITNESS: Yes.

By MR. GOLDBERG:

Q. And completing it for Sioux City Gas & Electric Company, the earnings per share were $1.89 and the earnings-offering-price ratio on that basis was 6.55? A. That is right.

TRIAL EXAMINER: You didn't use the 60 per cent there, did you?

THE WITNESS: Yes.